BRAKE SYSTEM

32038–02

PRECAUTION

- **Care must be taken to replace each part properly as it could affect the performance of the brake system and result in a driving hazard. Replace the parts with parts having the same part number or equivalent.**
- **It is very important to keep parts and the area clean when repairing the brake system.**
- **If the vehicle is equipped with a mobile communication system, refer to the precaution in the INTRODUCTION section.**

32039–04

PROBLEM SYMPTOMS TABLE

Use the table below to help you find the cause of the problem. The numbers indicate the priority of the likely cause of the problem. Check each part in order. If necessary, replace these parts.

Symptom	Suspect Area	See page
Low pedal or spongy pedal	1. Fluid leaks for brake system	–
	2. Air in brake system	32–4
	3. Piston seals (Worn or damaged)	32–25 32–33
	4. Rear brake shoe clearance (Out of adjustment)	32–39
	5. Master cylinder (Fauly)	32–12
	6. Booster push rod (Out of adjustment)	32–12
Brake drag	1. Brake pedal freeplay (Minimal)	32–6
	2. Parking brake pedal travel (Out of adjustment)	33–2
	3. Parking brake wire (Sticking)	33–12 33–16 33–19
	4. Rear brake shoe clearance (Out of adjustment)	32–39
	5. Parking brake shoe clearance (Out of adjustment)	33–21
	6. Pad or lining (Cracked or distorted)	32–25 32–33 32–39
	7. Piston (Stuck)	32–25 32–33
	8. Piston (Frozen)	32–25 32–33
	9. Anchor, tension or return spring (Faulty)	32–39 33–21
	10.Booster push rod (Out adjustment)	32–12
	11.Master cylinder (Faulty)	32–12
Brake pull	1. Piston (Stuck)	32–25 32–33
	2. Pad or lining (Oily)	32–25 32–33 32–39
	3. Piston (Frozen)	32–25 32–33
	4. Disc (Scored)	32–25 32–33
	5. Pad or lining (Cracked or distorted)	32–25 32–33 32–39

Hard pedal but brake inefficient	1. Fluid leaks for brake system	–
	2. Air in brake system	32–4
	3. Pad or lining (Worn)	32–25 32–33 32–39
	4. Pad or lining (Cracked or distorted)	32–25 32–33 32–39
	5. Rear brake shoe clearance (Out of adjustment)	32–39
	6. Pad or lining (Oily)	32–25 32–33 32–39
	7. Pad or lining (Glanzed)	32–25 32–33 32–39
	8. Disc (Scored)	32–25 32–33
	9. Booster push rod (Out of adjustment)	32–12
Noise from brakes	1. Pad on lining (Cracked or distorted)	32–25 32–33 32–39
	2. Installation bolt (Loose)	32–25 32–33
	3. Disc (Scored)	32–25 32–33
	4. Pad support plate (Loose)	32–25 32–33
	5. Sliding pin (Worn)	32–25 32–33
	6. Pad or lining (dirty)	32–25 32–33 32–39
	7. Pad or lining (Glanzed)	32–25 32–33 32–39
	8. Anchor, tension or return spring (Faulty)	32–39 33–21
	9. Anti–squeal shim (Damaged)	32–25 32–33
	10.Shoe hold–down spring (Damaged)	32–39 33–21

BRAKE FLUID

3203B–02

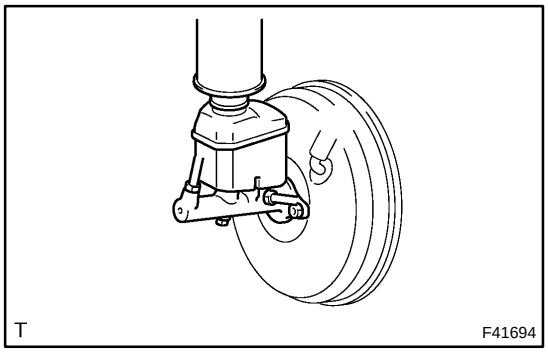
BLEEDING

HINT:

If any work is done on the brake system or if air in the brake lines is suspected, bleed the air from the system.

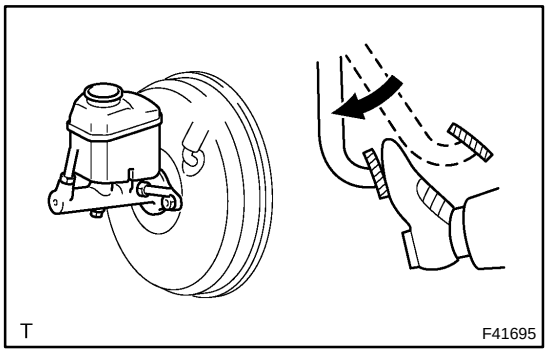
NOTICE:

Wash off the brake fluid immediately if it comes into contact with a painted surface.



1. FILL RESERVOIR WITH BRAKE FLUID

Fluid: SAE J1703 or FMVSS No. 116 DOT3



2. BLEED MASTER CYLINDER

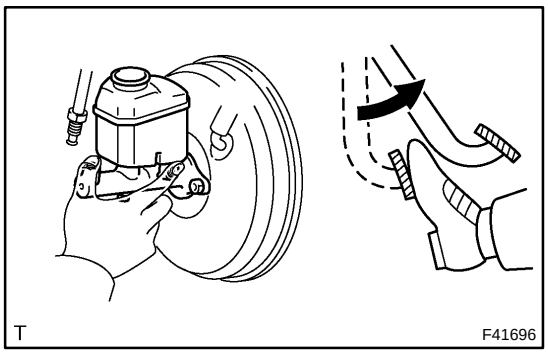
HINT:

If the master cylinder has been disassembled or if the reservoir becomes empty, bleed the air from the master cylinder.

(a) Remove the air cleaner assembly with hose.

(b) Disconnect the brake lines from the master cylinder.
SST 09023–00100

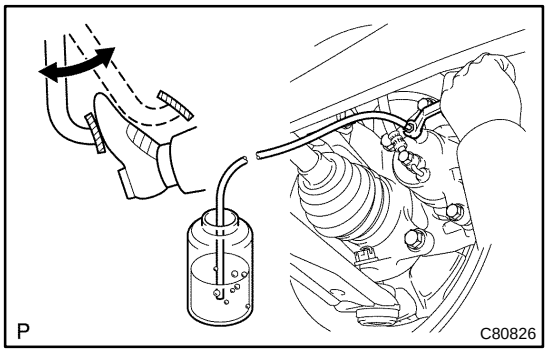
(c) Slowly depress the brake pedal and hold it.



(d) Block off the outer holes with your fingers, and release the brake pedal.

(e) Repeat (c) and (d) 3 or 4 times.

(f) Install the air cleaner assembly with hose.



3. BLEED BRAKE LINE

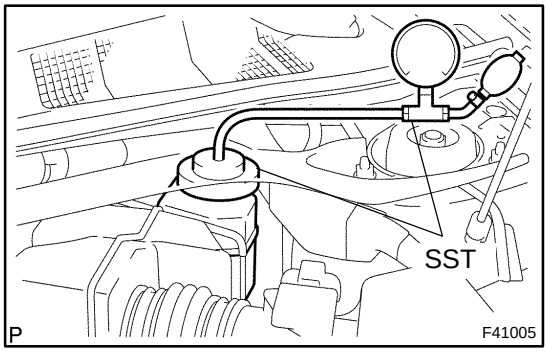
(a) Connect the vinyl tube to the brake caliper.

(b) Depress the brake pedal several times, then loosen the bleeder plug with the pedal held down.

(c) At the point when fluid stops coming out, tighten the bleeder plug, then release the brake pedal.
Torque: 8.3 N·m (85 kgf·cm, 74 in.·lbf)

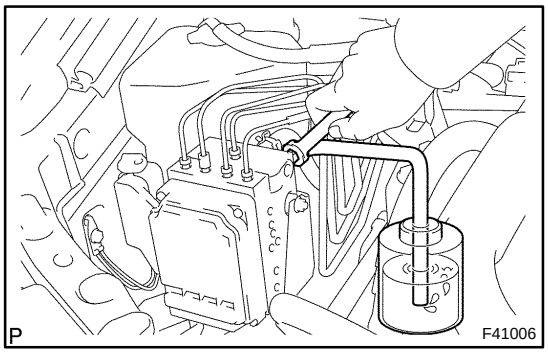
(d) Repeat (b) and (c) until all the air in the fluid has been bled out.

(e) Repeat the above procedure to bleed the air out of the brake line for each wheel.

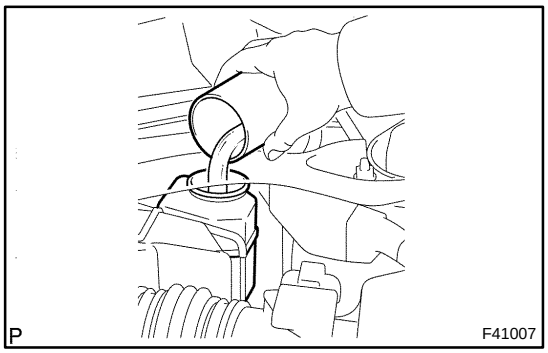


4. BLEED ABS & TRACTION ACTUATOR ASSY(W/ VSC)

(a) Remove the reservoir cap.
(b) Install SST to the reservoir.
SST 09992–00242, 09992–00350
(c) Connect the vinyl tube to the bleeder plug of the ABS & TRACTION actuator.
(d) Using SST, apply the pressure described below to the reservoir.
Pressure: 98.1 kPa (1.0 kgf/cm^2, 14.2 psi)



(e) Loosen the bleeder plug.
(f) Bleed the air out of the ABS & TRACTION actuator, tighten the bleeder plug.
Torque: 8.3 N·m (85 kgf·cm, 74 in.·lbf)



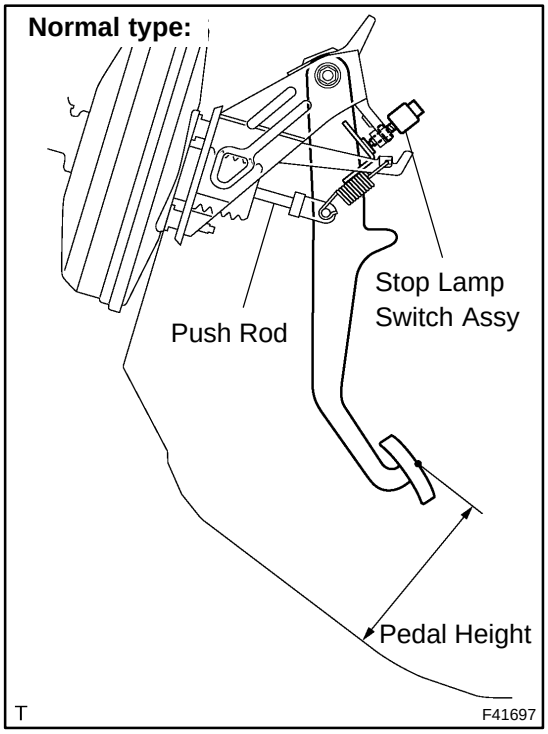
5. CHECK FLUID LEVEL IN RESERVOIR

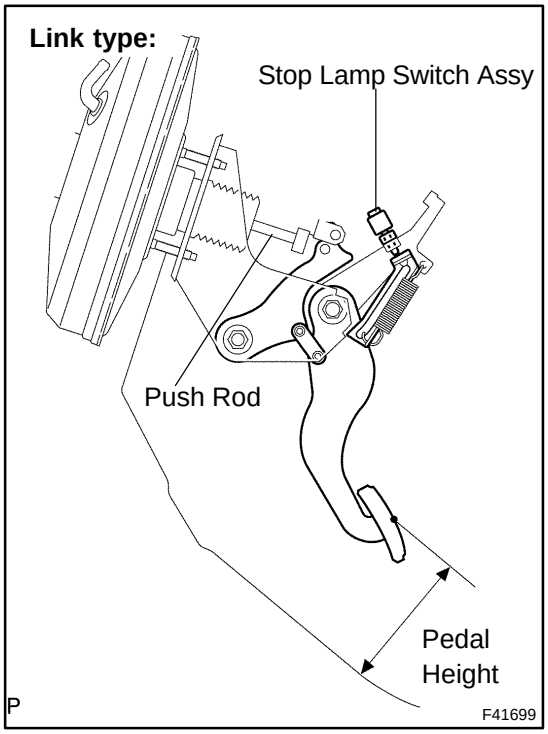
(a) Check the fluid level and add fluid if necessary.
Fluid: SAE J1703 or FMVSS No. 116 DOT3

BRAKE PEDAL SUPPORT ASSY

320CX–01

ADJUSTMENT





1. CHECK AND ADJUST BRAKE PEDAL HEIGHT

(a) Inspect brake pedal height.

Pedal height from asphalt sheet:
144.1 – 154.1 mm (5.673 – 6.067 in.)

(b) Adjust brake pedal height.

(1) Remove the instrument panel finish panel sub–assy lower and instrument panel insert sub–assy lower LH.

(2) Disconnect the connector from the stop lamp switch assy.

(3) Loosen the stop lamp switch lock nut and remove the stop lamp switch assy.

(4) Loosen the clevis lock nut.

(5) Adjust the pedal height by turning the pedal push rod.

(6) Tighten the push rod lock nut.

Torque: 26 N·m (265 kgf·cm, 19 ft·lbf)

(7) Install the stop lamp switch assy.

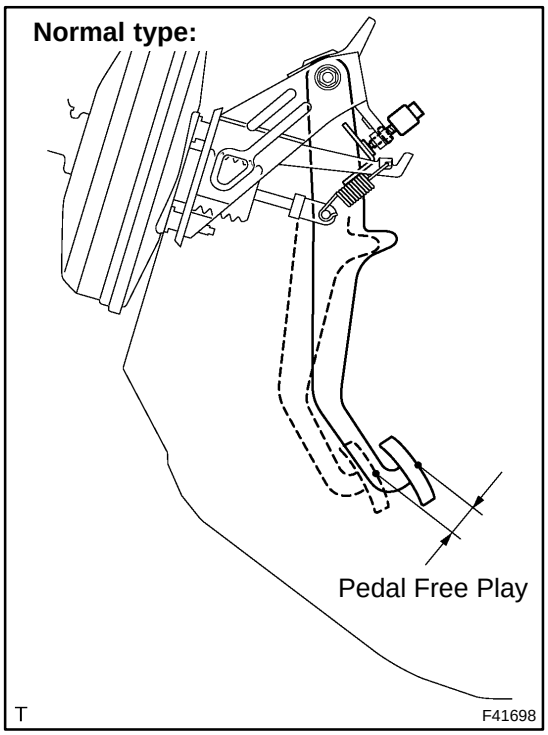
(8) Connect the connector to the stop lamp switch assy.

(9) Push the brake pedal in 5 – 10 mm (0.20 – 0.39 in.), turn the stop lamp switch assy to lock the nut in the position where the stop lamp goes off.

(10) After installation, push the brake pedal in 5 – 10 mm (0.20 – 0.39 in.), check that stop lamp lights up.

(11) TMMK made:
Install the .

(12) Install the instrument panel insert sub–assy lower LH and instrument panel finish panel sub–assy lower.



2. CHECK PEDAL FREE PLAY

(a) Stop the engine and depress the brake pedal several times until there is no more vacuum left in the booster.

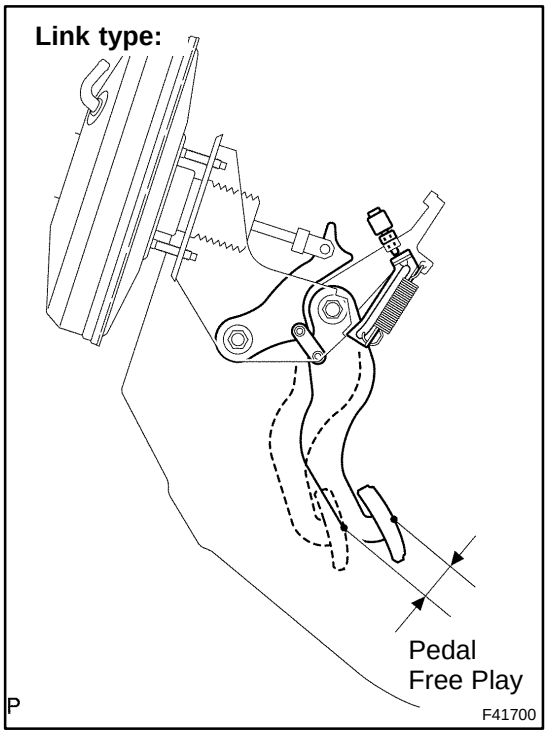
(b) Push in the pedal until the beginning of the resistance is felt. Measure the distance, as shown.

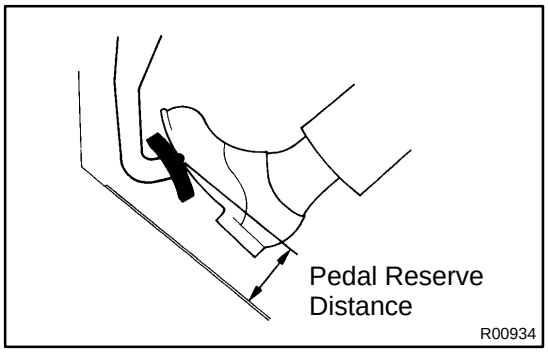
Pedal freeplay: 1 – 6 mm (0.04 – 0.24 in.)

If incorrect, check the stop lamp switch assy clearance.

If the clearance is OK, then troubleshoot the brake system.

Stop lamp switch clearance:
0.5 – 2.5 mm (0.020 – 0.098 in.)





3. CHECK PEDAL RESERVE DISTANCE

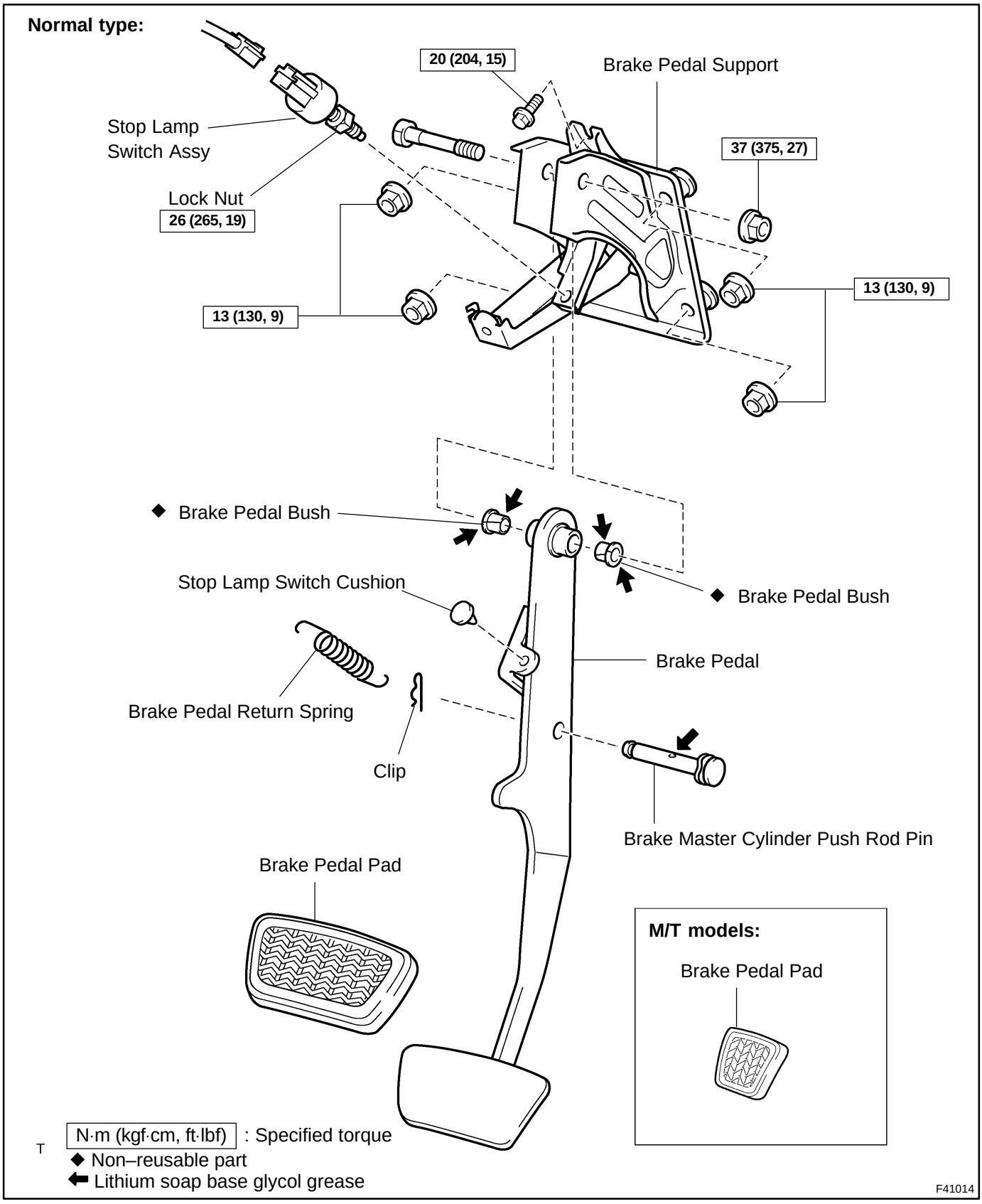
(a) Release the parking brake pedal.
With engine running, depress the pedal and measure the pedal reserve distance, as shown.

Pedal reserve distance from asphalt sheet at 490 N (50 kgf, 110.2 lbf): More than 63 mm (2.48 in.)

If incorrect, troubleshoot the brake system.

320CY–01

COMPONENTS



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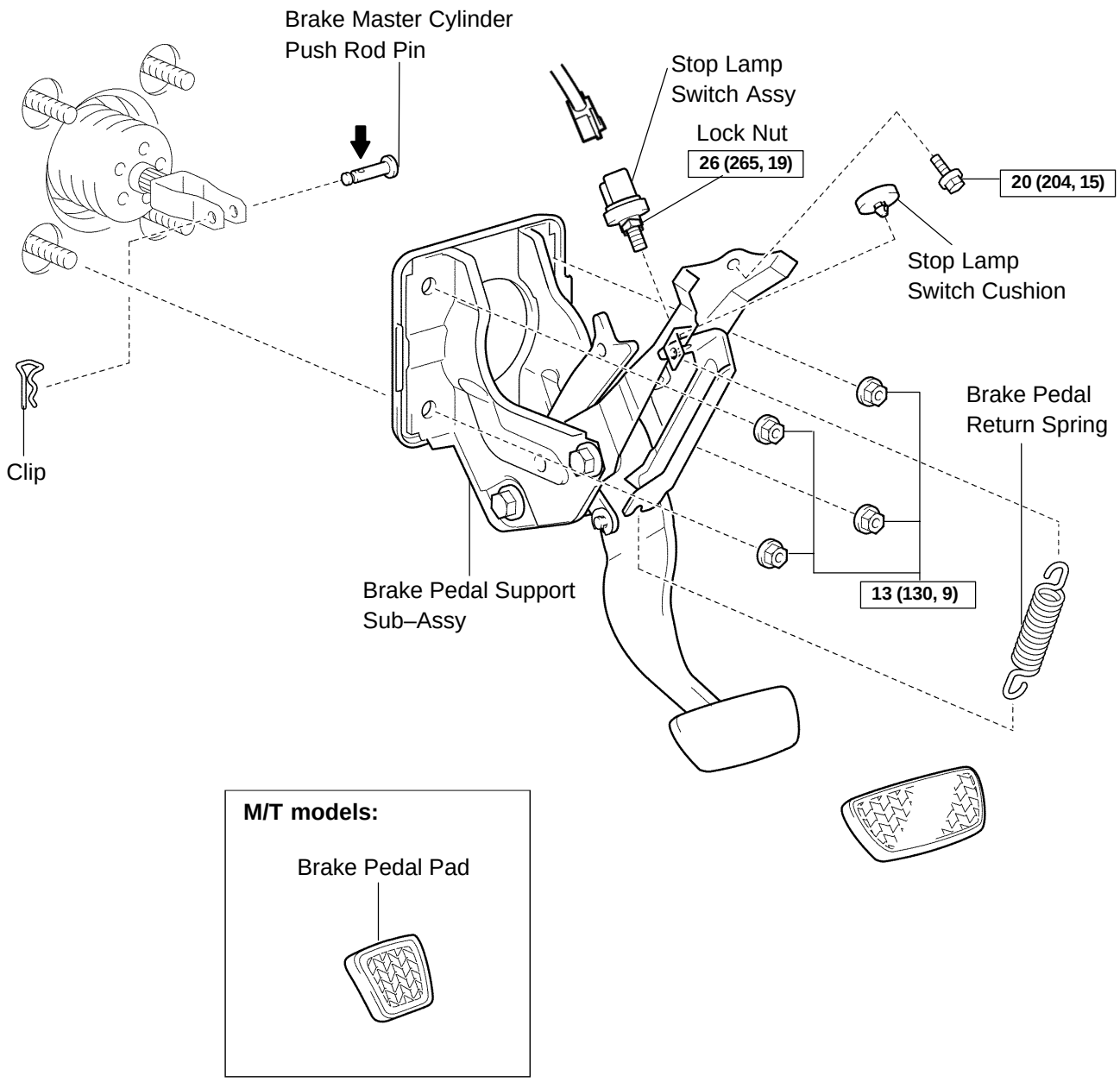

Brake Master Cylinder
Push Rod Pin
Stop Lamp
Switch Assy
Lock Nut
26 (265, 19)
20 (204, 15)
Stop Lamp
Switch Cushion
Brake Pedal
Return Spring
Clip
Brake Pedal Support
Sub–Assy
13 (130, 9)
M/T models:
Brake Pedal Pad
N·m (kgf·cm, ft·lbf) : Specified torque
P Lithium soap base glycol grease
C86251

320CZ–01

OVERHAUL

HINT:

COMPONENTS: See page 32–8 and 71–7

1. REMOVE INSTRUMENT PANEL REINFORCEMENT
(See page 71–12)

2. REMOVE BRAKE PEDAL RETURN SPRING

3. REMOVE PUSH ROD PIN

(a) Remove the clip and push rod pin.

4. REMOVE BRAKE PEDAL SUPPORT ASSY

(a) Disconnect the stop lamp switch connector.
(b) Remove the bolt, 4 nuts and brake pedal support assy.

5. REMOVE STOP LAMP SWITCH ASSY

(a) Loosen the lock nut and remove the stop lamp switch.

6. REMOVE BRAKE PEDAL SUB–ASSY (NORMAL TYPE BRAKE PEDAL)

(a) Remove the nut, bolt and brake pedal sub–assy from brake pedal support sub–assy.

7. REMOVE BRAKE PEDAL PAD

8. REMOVE BRAKE PEDAL BUSH (NORMAL TYPE BRAKE PEDAL)

(a) Remove the 2 brake pedal bushes from brake pedal.

9. REMOVE STOP LAMP SWITCH CUSHION

10. INSTALL STOP LAMP SWITCH CUSHION

11. INSTALL BRAKE PEDAL BUSH (NORMAL TYPE BRAKE PEDAL)

(a) Install the new 2 brake pedal bushes to brake pedal.

HINT:

Apply the lithium soap base glycol grease to the parts indicates by arrows (See page 32–8).

12. INSTALL BRAKE PEDAL PAD

13. INSTALL BRAKE PEDAL SUB–ASSY (NORMAL TYPE BRAKE PEDAL)

(a) Install the brake pedal sub–assy with the bolt and nut.
Torque: 37 N·m (375 kgf·cm, 27 ft·lbf)

14. INSTALL STOP LAMP SWITCH ASSY

(a) Install the stop lamp switch with the lock nut.
Torque: 26 N·m (265 kgf·cm, 19 ft·lbf)

15. INSTALL BRAKE PEDAL SUPPORT ASSY

(a) Install the brake pedal support assy with the bolt and 4 nuts.
Torque:
Bolt: 20 N·m (204 kgf·cm, 15 ft·lbf)
Nut: 13 N·m (130 kgf·cm, 9 ft·lbf)

16. INSTALL PUSH ROD PIN

(a) Install the push rod pin and clip.

HINT:

Apply the lithium soap base glycol grease to the parts indicates by arrows (See page 32–8).

17. INSTALL BRAKE PEDAL RETURN SPRING

18. INSTALL INSTRUMENT PANEL REINFORCEMENT (See page 71–12)

19. CHECK AND ADJUST BRAKE PEDAL HEIGHT(See page 32–6)

20. CHECK PEDAL FREE PLAY(See page 32–6)

21. CHECK PEDAL RESERVE DISTANCE(See page 32–6)

BRAKE MASTER CYLINDER SUB–ASSY

320CT–01

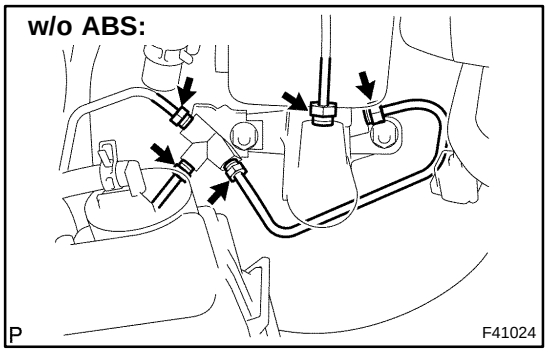
OVERHAUL

1. DRAIN BRAKE FLUID

NOTICE:

Wash off the brake fluid immediately if it comes into contact with a painted surface.

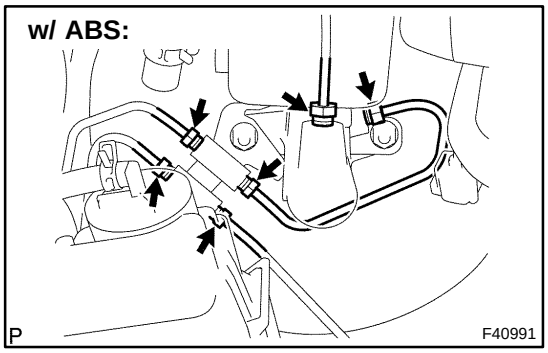
2. REMOVE AIR CLEANER ASSY



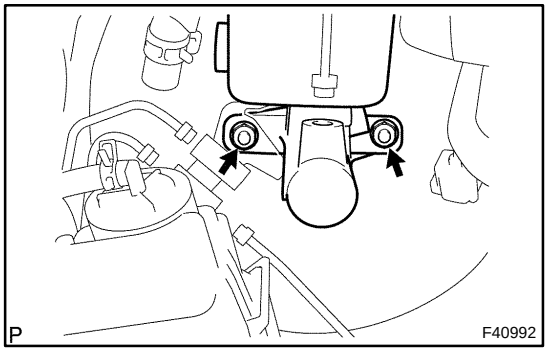
3. REMOVE BRAKE MASTER CYLINDER SUB–ASSY

(a) Disconnect the level warning switch connector.

(b) w/o ABS:
Using SST, disconnect the 5 brake tubes from the brake master cylinder.
SST 09023–00100



(c) w/ ABS:
Using SST, disconnect the 6 brake tubes from the brake master cylinder.
SST 09023–00100



(d) w/o ABS:
Remove the 2 nuts, pull out the 3–way and brake master cylinder sub–assy.

(e) w/ ABS:
Remove the 2 nuts, pull out the 2–way and brake master cylinder sub–assy.

4. REMOVE BRAKE MASTER CYLINDER RESERVOIR FILLER CAP ASSY

(a) Pull out the master cylinder reservoir filler cap assy.

5. REMOVE BRAKE MASTER CYLINDER RESERVOIR STRAINER

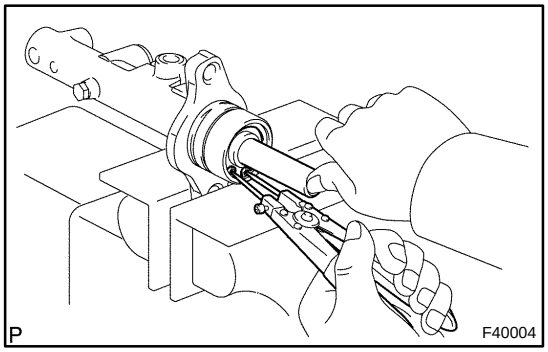
(a) Pull out the master cylinder reservoir strainer.

6. REMOVE BRAKE MASTER CYLINDER RESERVOIR SUB–ASSY

(a) Remove the screw and pull out the master cylinder reservoir sub–assy.

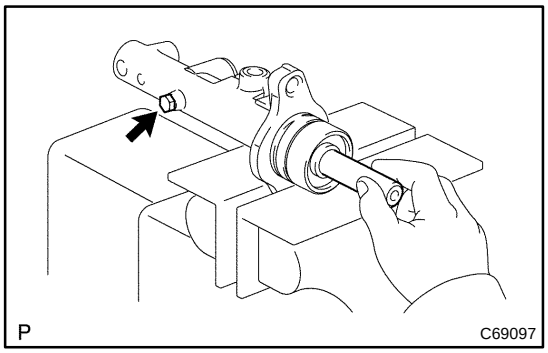
7. REMOVE MASTER CYLINDER RESERVOIR GROMMET

(a) Remove the 2 master cylinder reservoir grommets.



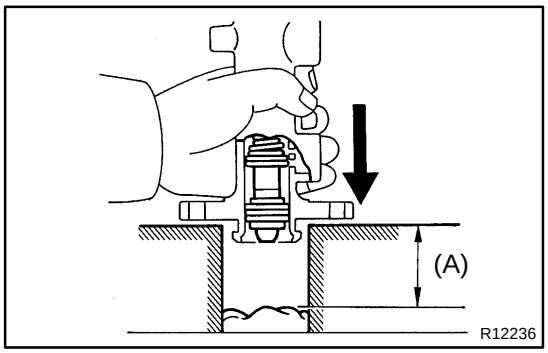
8. REMOVE BRAKE MASTER CYLINDER KIT(W/O VSC)

(a) Place master cylinder in vise.
(b) Remove the O–ring.
(c) Push in the piston and remove the snap ring with snap ring pliers.



(d) Push in the piston and remove the piston stopper bolt and gasket.
(e) Remove the No.1 piston sub–assy, pulling straight out not at an angle.

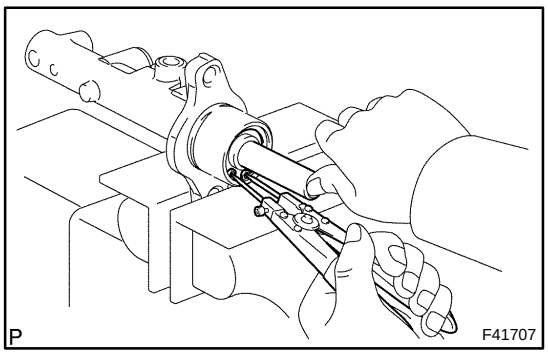
NOTICE:
If pulled out at an angle, there is a possibility that the cylinder bore could be damaged.



(f) Place a waste cloth and 2 wooden blocks on the work table and lightly edges until the No.2 piston sub–assy drops out of the cylinder.

HINT:
Make sure the distance (A) from the rag the top of the blocks is at least 100 mm (3.94 in.).

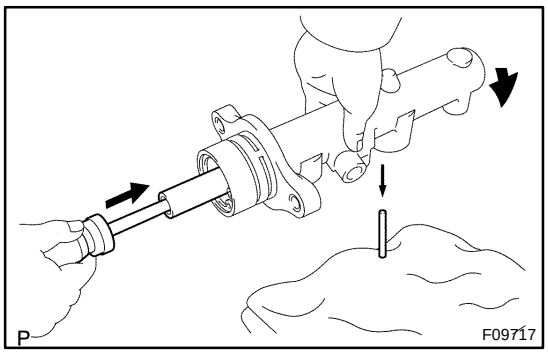
NOTICE:
If pulled out at an angle, there is a possibility that the cylinder bore could be damaged.



9. REMOVE BRAKE MASTER CYLINDER KIT(W/ VSC)

(a) Place master cylinder in vise.
(b) Remove the O–ring.
(c) Push in the piston and remove the snap ring with snap ring pliers.

NOTICE:
If pulled out at an angle, there is a possibility that the cylinder bore could be damaged.



(d) Push in the piston with a screwdriver, and remove the straight pin by turning over the cylinder body.

HINT:

Tape the screwdriver tip before use.

(e) Remove the No.1 and No.2 piston sub–assy and 2 springs by hand, pulling straight out, not at an angle.

10. INSPECT MASTER CYLINDER BODY

(a) Check the cylinder bore for rust or scoring.

11. INSTALL BRAKE MASTER CYLINDER KIT(W/O VSC)

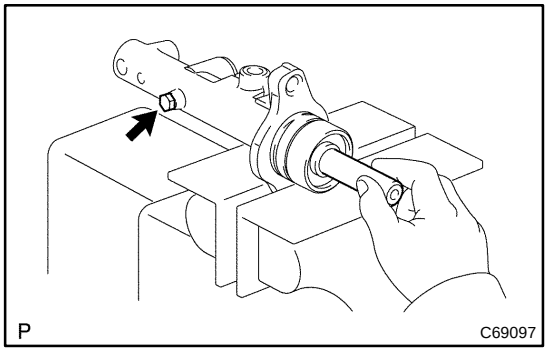
(a) Place master cylinder in vise.

(b) Apply the lithium soap base grycol grease on new No.1 and No.2 piston sub–assy.

(c) Install the No.2 and No.1 piston sub–assy.

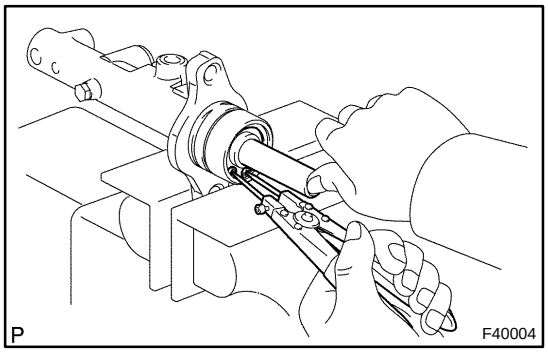
NOTICE:

- **If the piston is inserted at an angle, there is a possibility that the cylinder bore could be damaged.**
- **Be careful not to damage the rubber lips on the pistons.**



(d) Push in the piston and install a new gasket and a new piston stopper bolt.

Torque: 10 N·m (100 kgf·cm, 7 ft·lbf)



(e) Push in the piston and install the snap ring with snap ring pliers.

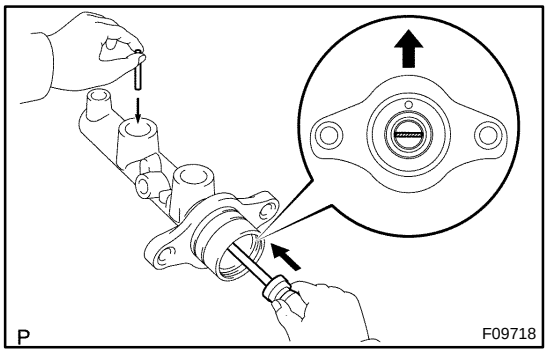
(f) Apply the lithium soap base grycol grease on a new O–ring and install the O–ring to the master cylinder.

12. INSTALL BRAKE MASTER CYLINDER KIT(W/ VSC)

(a) Place master cylinder in vise.
(b) Apply the lithium soap base glycol grease on new No.1 and No.2 piston sub–assy.
(c) Install the No.2 and No.1 piston sub–assy.

NOTICE:

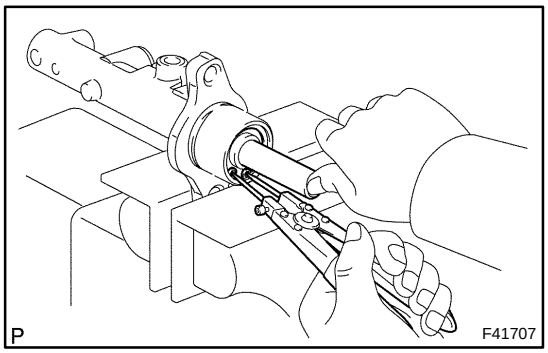
- **If the piston is inserted at an angle, there is a possibility that the cylinder bore could be damaged.**
- **Be careful not to damage the rubber lips on the pistons.**



(d) Install the straight pin.

HINT:

Insert the No.2 piston with the groove positioning horizontally.



(e) Push in the piston and install the snap ring with snap ring pliers.
(f) Apply the lithium soap base glycol grease on a new O–ring and install the O–ring to the master cylinder.

13. INSTALL MASTER CYLINDER RESERVOIR GROMMET

(a) Apply the lithium soap base glycol grease on the 2 master cylinder reservoir grommets.
(b) Install the 2 master cylinder reservoir grommets to the master cylinder reservoir sub–assy.

14. INSTALL BRAKE MASTER CYLINDER RESERVOIR SUB–ASSY

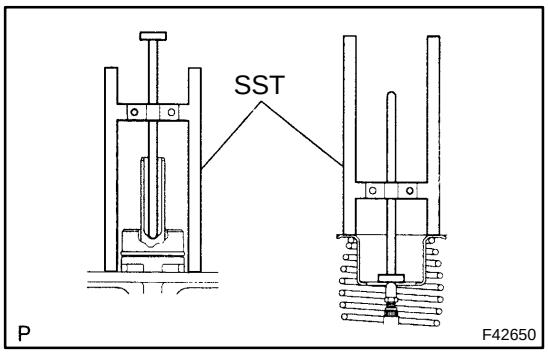
(a) Install the master cylinder reservoir sub–assy to the master cylinder with the screw.

15. INSTALL BRAKE MASTER CYLINDER RESERVOIR STRAINER

(a) Install the brake master cylinder reservoir strainer.

16. INSTALL BRAKE MASTER CYLINDER RESERVOIR FILLER CAP ASSY

(a) Install the brake master cylinder reservoir filler cap assy.



17. INSPECT AND ADJUST BRAKE BOOSTER PUSH ROD

(a) Apply SST to the master cylinder.
SST 09737–00011

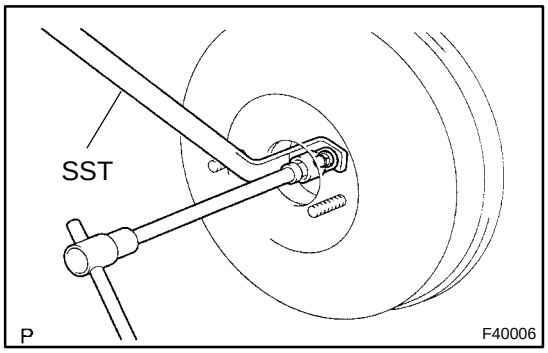
(b) Set SST, on the master cylinder, lower the pin of the SST until it slightly touches the piston.

(c) Apply the chalk to the flat surfaced tip of the SST pin.

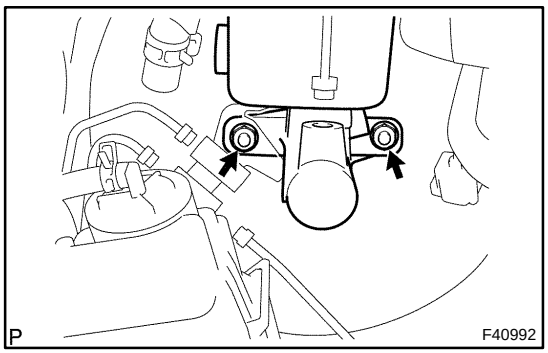
(d) Turn SST upside down and place it clearance between the brake booster and SST.
Clearance: 0 mm (0 in.)

HINT:

- If there is a clearance between the SST main body and the booster shell. It means that the specified value, and no chalk attachment on the booster push rod means that it is more than the specified value.
- Brake booster push rod clearance before shipment is adjusted to be ± 0.105 mm (± 0.004 in.).



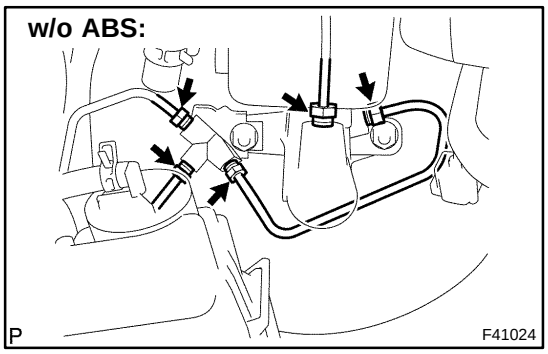
(e) Using SST, adjust the booster push rod length until the push rod lightly touches the pin head.
SST 09737–00020



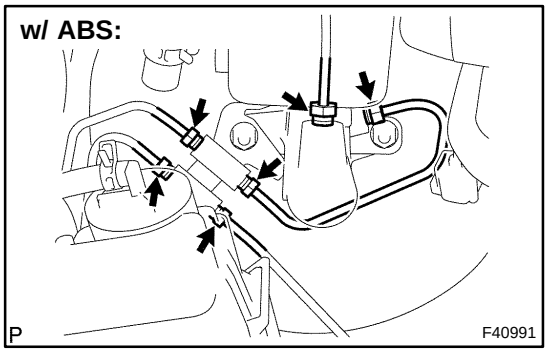
18. INSTALL BRAKE MASTER CYLINDER SUB–ASSY

(a) w/o ABS:
Install the master cylinder sub–assy and 3–way with the 2 nuts.
Torque: 13 N·m (130 kgf·cm, 9 ft·lbf)

(b) w/ ABS:
Install the master cylinder sub–assy and 2–way with the 2 nuts.
Torque: 13 N·m (130 kgf·cm, 9 ft·lbf)



(c) w/o ABS:
Using SST and connect the 5 brake tubes to the master cylinder sub–assy.
Torque: 15 N·m (155 kgf·cm, 11 ft·lbf)
SST 09023–00100

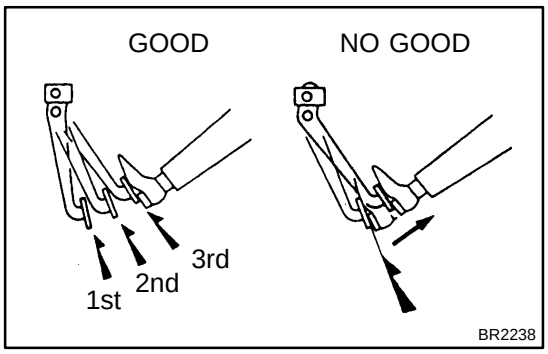


(d) w/ ABS:
Using SST and connect the 6 brake tubes to the master cylinder sub–assy.
Torque: 15 N·m (155 kgf·cm, 11 ft·lbf)
SST 09023–00100

(e) Connect the level warning switch connector.

19. FILL RESERVOIR WITH BRAKE FLUID
20. BLEED MASTER CYLINDER(See page 32–4)
SST 09023–00100
21. BLEED BRAKE LINE(See page 32–4)
22. INSTALL AIR CLEANER ASSY

23. CHECK FLUID LEVEL IN RESERVOIR
24. CHECK BRAKE FLUID LEAKAGE



BRAKE BOOSTER ASSY

320CU–01

ON–VEHICLE INSPECTION

1. INSPECT BRAKE BOOSTER

(a) Air tightness check.

(1) Start the engine and stop it after 1 or 2 minutes. Depress the brake pedal several times slowly.

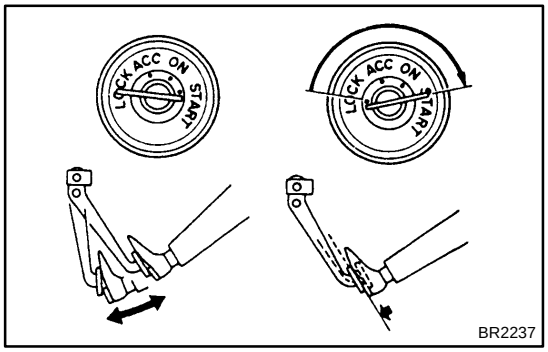
HINT:

If the pedal goes down farthest the 1st time, but gradually rises after the 2nd or 3rd time, the booster is air tight.

(2) Depress the brake pedal while the engine is running, and stop the engine with the pedal depressed.

HINT:

If there is no change in the pedal reserve distance after holding the pedal for 30 seconds, the booster is air–tight.



(b) Operating check.

(1) Depress the brake pedal several times with the ignition switch OFF and check that there is no change in the pedal reserve distance.

(2) Depress the brake pedal and start the engine.

HINT:

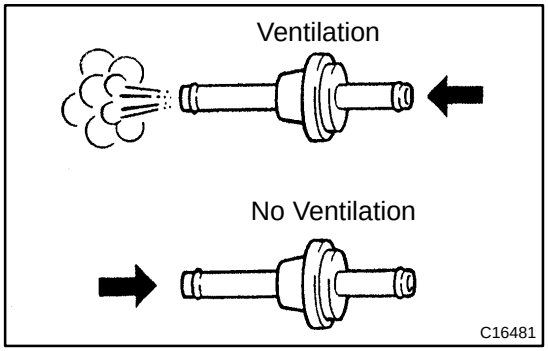
If the pedal goes down slightly, operation is normal.

2. INSPECT VACUUM CHECK VALVE

(a) Check vacuum check valve.

(1) Slide the clip and disconnect the vacuum hose.

(2) Remove the vacuum check valve.

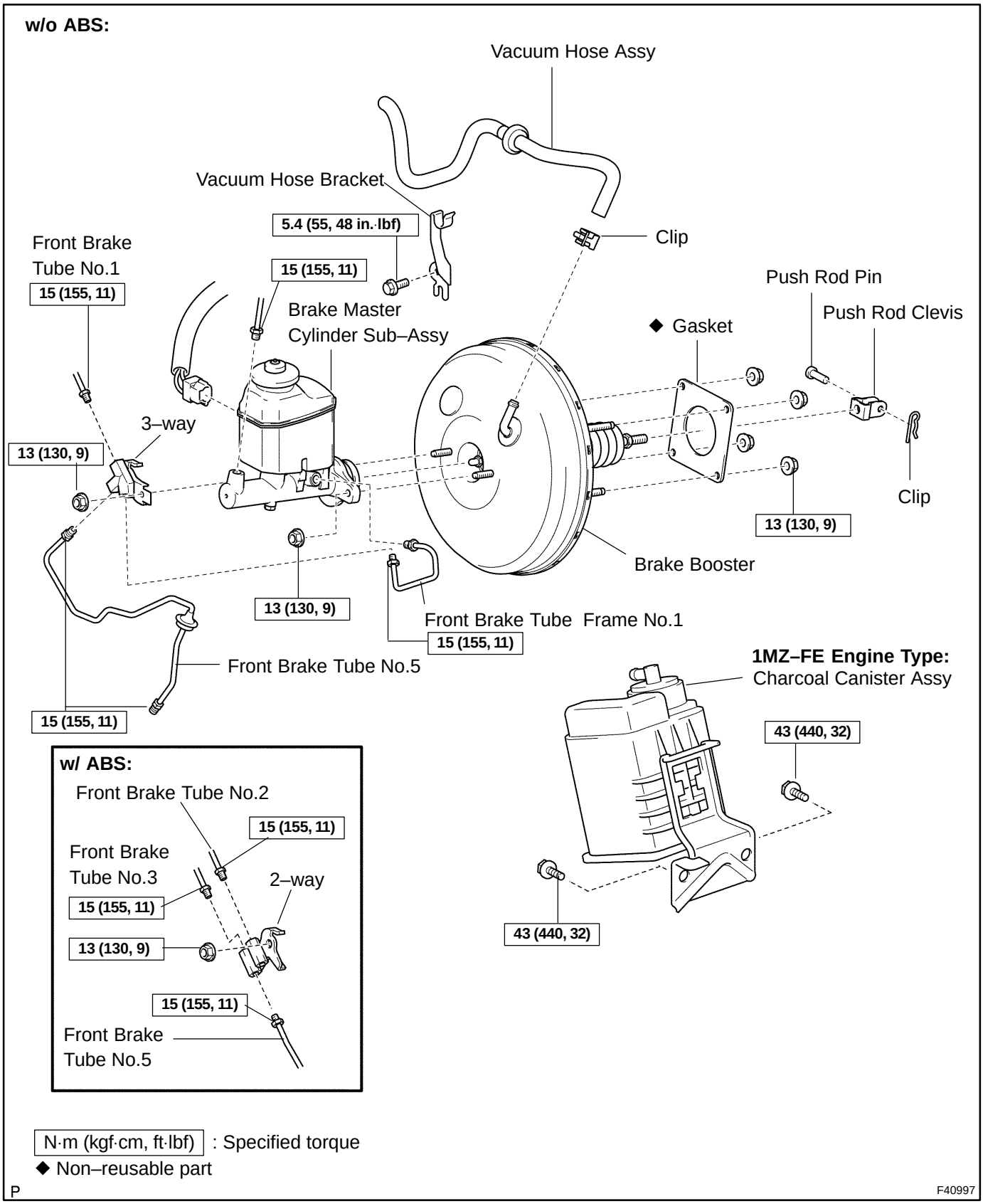


(3) Check that there is ventilation from the booster to engine, and no ventilation from the engine to the booster.

(4) If any fault is found, replace the vacuum check valve.

320CV–01

COMPONENTS



320CW–01

REPLACEMENT

HINT:

COMPONENTS: See page 71–7 and 32–19

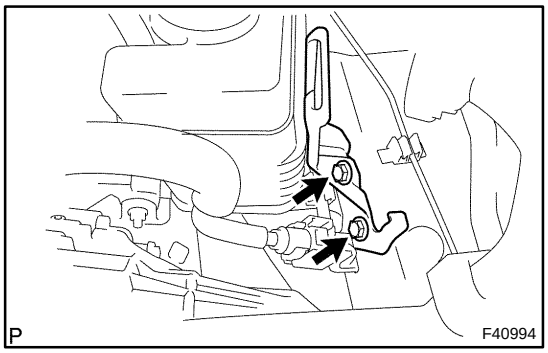
1. DRAIN BRAKE FLUID

NOTICE:

Wash off the brake fluid immediately if it comes into contact with a painted surface.

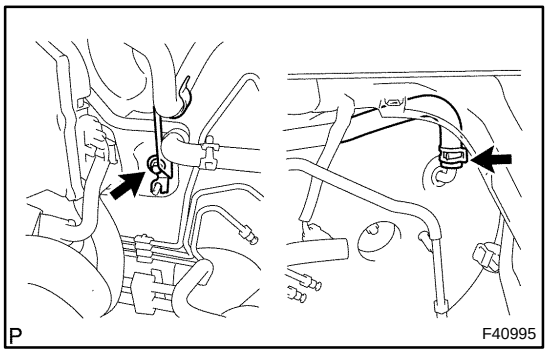
2. REMOVE AIR CLEANER ASSY

3. REMOVE BRAKE MASTER CYLINDER SUB–ASSY
(See page 32–12)
SST 09023–00100



4. SEPARATE CHARCOAL CANISTER ASSY(1MZ–FE ENGINE TYPE)

(a) Remove the 2 bolts and separate the charcoal canister from the body.



5. DISCONNECT VACUUM HOSE ASSY

(a) Remove the bolt and separate the vacuum hose from the vacuum hose bracket.

(b) Slide the clip and disconnect the vacuum hose from the brake booster.

6. REMOVE FRONT DOOR SCUFF PLATE LH
(See page 71–12)

7. REMOVE COWL SIDE TRIM SUB–ASSY LH
(See page 71–12)

8. REMOVE INSTRUMENT PANEL SUB–ASSY UPPER
(See page 71–12)

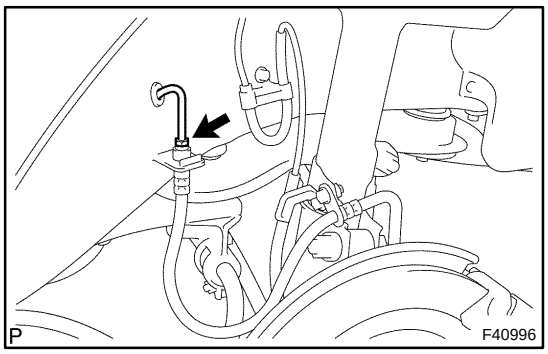
9. REMOVE INSTRUMENT PNL INSERT SUB–ASSY LWR LH
(See page 71–12)

10. REMOVE PUSH ROD PIN

(a) Remove the clip and push rod pin.

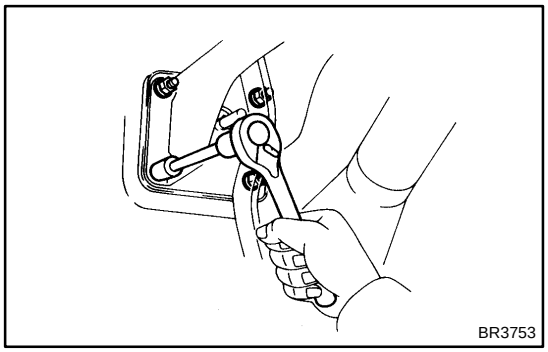
11. REMOVE BRAKE MASTER CYLINDER PUSH ROD CLEVIS

(a) Loosen the lock nut and remove the push rod clevis.



12. REMOVE FRONT BRAKE TUBE NO.5

(a) Using SST and remove the front brake tube No.5.
SST 09023–00100



13. REMOVE BRAKE BOOSTER ASSY

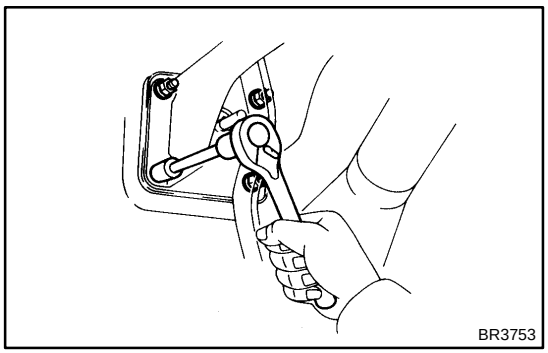
(a) Remove the 4 nuts and clevis.
(b) Pull out the brake booster assy.

14. REMOVE BRAKE BOOSTER GASKET

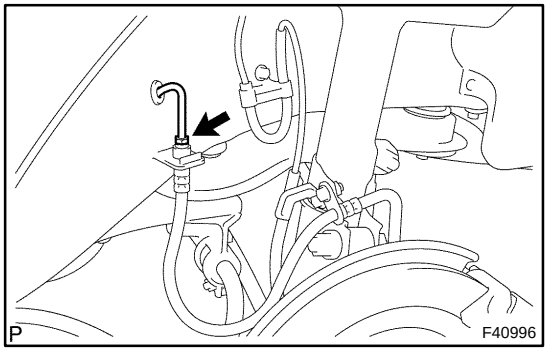
15. INSTALL BRAKE BOOSTER GASKET

(a) Install a new brake booster gasket to the brake booster.

16. INSTALL BRAKE BOOSTER ASSY



(a) Install the brake booster with the 4 nuts.
Torque: 13 N·m (130 kgf·cm, 9 ft·lbf)



17. INSTALL FRONT BRAKE TUBE NO.5

(a) Using SST and install the front brake tube No.5.
Torque: 15 N·m (155 kgf·cm, 11 ft·lbf)
SST 09023–00100

18. INSTALL BRAKE MASTER CYLINDER PUSH ROD CLEVIS

(a) Install the push rod clevis and lock nut.

19. INSTALL PUSH ROD PIN

(a) Install the push rod pin and clip.

HINT:

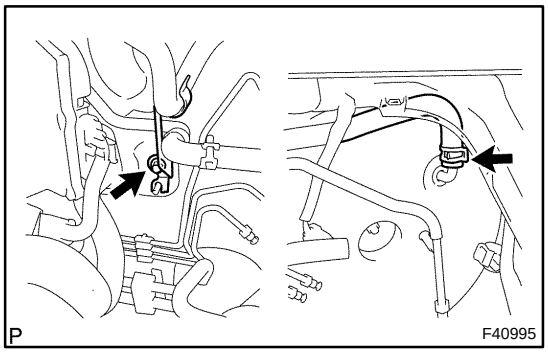
Apply the lithium soap base glycol grease to the part indicate by arrow (See page 32–8).

20. INSTALL INSTRUMENT PNL INSERT SUB–ASSY LWR LH
(See page 71–12)

21. INSTALL INSTRUMENT PANEL SUB–ASSY UPPER
(See page 71–12)

22. INSTALL COWL SIDE TRIM SUB–ASSY LH
(See page 71–12)

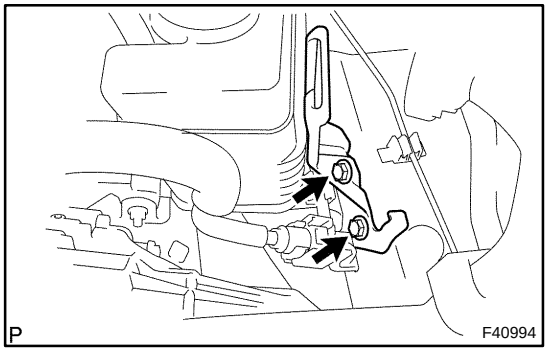
23. INSTALL FRONT DOOR SCUFF PLATE LH
(See page 71–12)



24. INSTALL VACUUM HOSE ASSY

(a) Install the vacuum hose and vacuum hose bracket to the body with a bolt.
Torque: 5.4 N·m (55 kgf·cm, 48 in.·lbf)

(b) Connect the vacuum hose to the brake booster with the clip.



25. CONNECT CHARCOAL CANISTER ASSY(1MZ–FE ENGINE TYPE)

(a) Install the charcoal canister with the 2 bolts.
Torque: 43 N·m (440 kgf·cm, 32 in.·lbf)

26. INSTALL BRAKE MASTER CYLINDER SUB–ASSY
(See page 32–12)
SST 09023–00100

27. INSTALL AIR CLEANER ASSY

28. FILL RESERVOIR WITH BRAKE FLUID

29. BLEED MASTER CYLINDER(See page 32–4)
SST 09023–00100

30. BLEED BRAKE LINE(See page 32–4)

31. CHECK FLUID LEVEL IN RESERVOIR

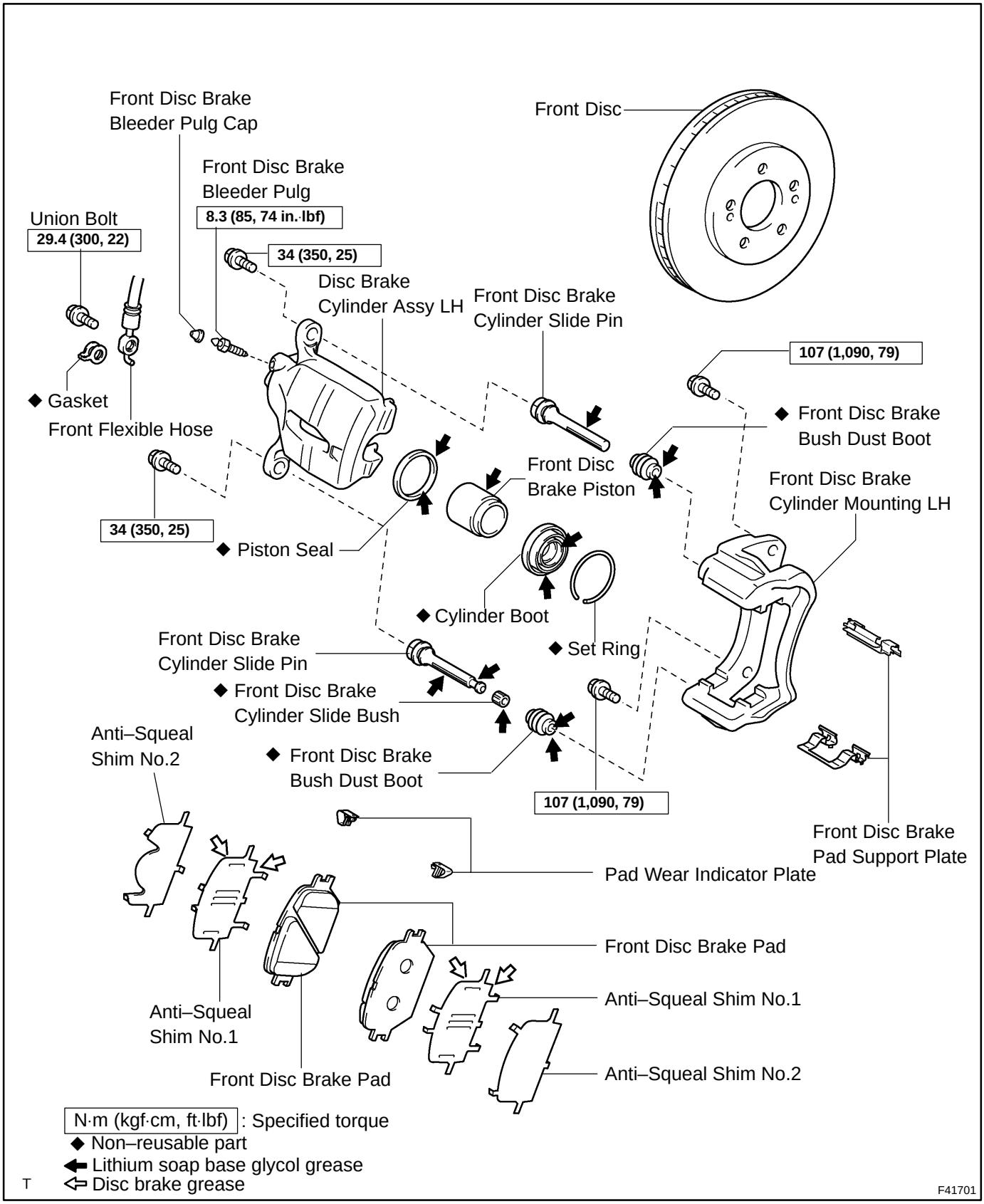
32. CHECK BRAKE FLUID LEAKAGE

33. CHECK AND ADJUST BRAKE PEDAL HEIGHT(See page 32–6)

FRONT BRAKE

320D0–01

COMPONENTS



OVERHAUL

HINT:

- COMPONENTS: See page 32–24
- Overhaul the RH side by the same procedures with LH side.

1. REMOVE FRONT WHEEL

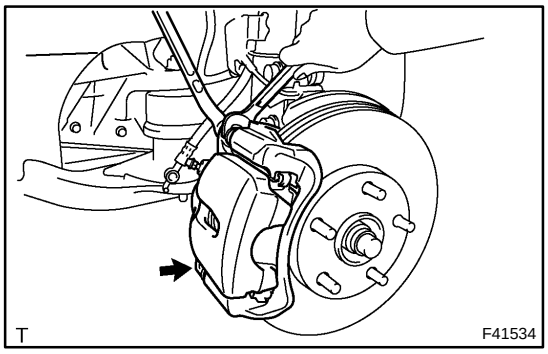
2. DRAIN BRAKE FLUID

NOTICE:

Wash off the brake fluid immediately if it comes into contact with a painted surface.

3. DISCONNECT FRONT FLEXIBLE HOSE

(a) Remove the union bolt and a gasket from the disc brake cylinder, then disconnect the flexible hose from the disc brake cylinder.

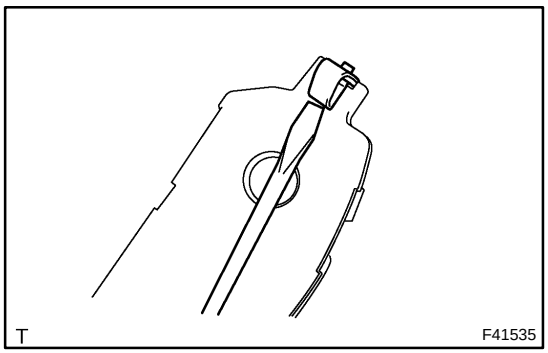


4. REMOVE DISC BRAKE CYLINDER ASSY FR LH

(a) Remove the 2 bolts and disc brake cylinder.

5. REMOVE DISC BRAKE PAD KIT FRONT (PAD ONLY)

(a) Remove the 2 brake pads with anti–squeal shim.



6. REMOVE ANTI SQUEAL SHIM KIT FRONT

(a) Remove the 2 anti–squeal shims from each of 2 brake pads.

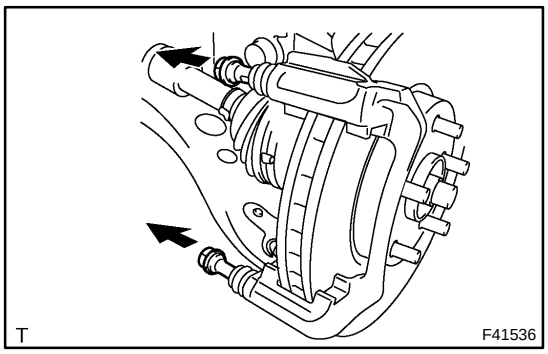
(b) Using a screwdriver, remove the wear indicator from each of 2 brake pads.

7. REMOVE FRONT DISC BRAKE PAD SUPPORT PLATE

(a) Remove the upper side front disc brake pad support plate.

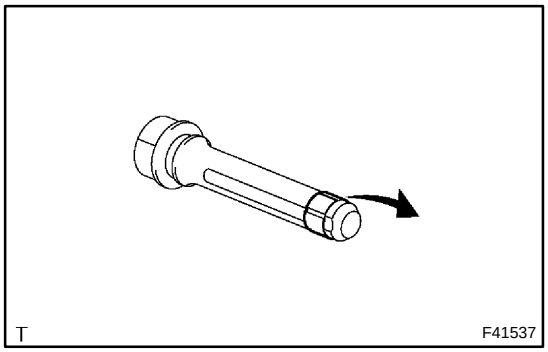
8. REMOVE FRONT DISC BRAKE PAD SUPPORT PLATE

(a) Remove the bottom side front disc brake pad support plate.



9. REMOVE FRONT DISC BRAKE CYLINDER SLIDE PIN

(a) Remove the 2 cylinder slide pins from the disc brake cylinder mounting.



10. REMOVE FRONT DISC BRAKE CYLINDER SLIDE BUSH

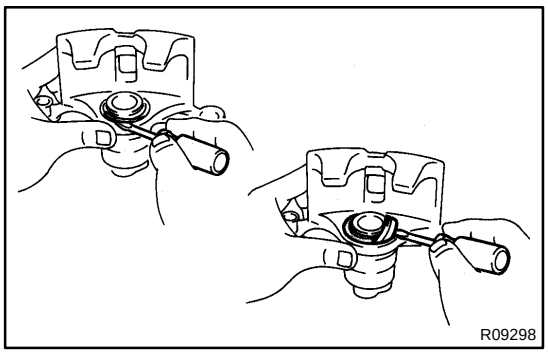
(a) Remove the cylinder slide bush from the cylinder slide pin.

11. REMOVE FRONT DISC BRAKE BUSH DUST BOOT

(a) Remove the 2 bush dust boots from the disc brake cylinder mounting.

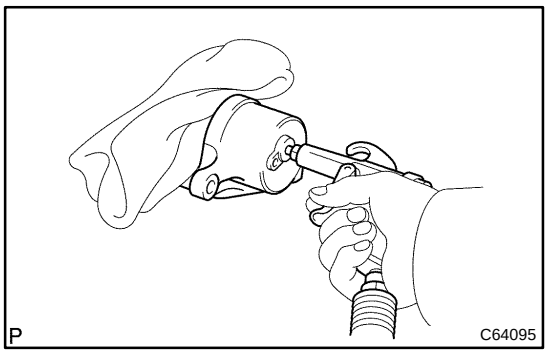
12. REMOVE FRONT DISC BRAKE CYLINDER MOUNTING LH

(a) Remove the 2 bolts and disc brake cylinder mounting LH.



13. REMOVE CYLINDER BOOT

(a) Using a screwdriver, remove the set ring and cylinder boot.



14. REMOVE FRONT DISC BRAKE PISTON

(a) Place a piece of cloth or similar, between the piston and the disc brake cylinder.
(b) Use compressed air to remove the piston from the disc brake cylinder.

CAUTION:
Do not place your fingers in front of the piston when using compressed air.
NOTICE:
Do not spatter the brake fluid.

15. REMOVE PISTON SEAL

(a) Using a screwdriver, remove the piston seal from the disc brake cylinder.

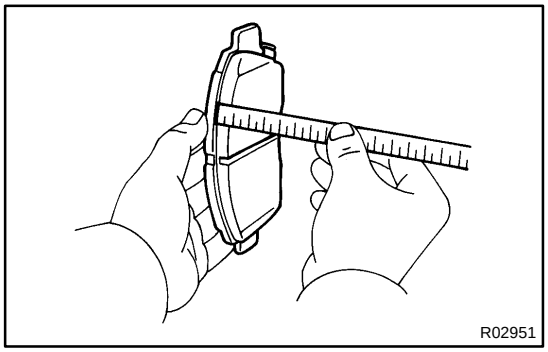
NOTICE:
Do not damage the inner cylinder and the cylinder groove.

16. REMOVE FRONT DISC BRAKE BLEEDER PLUG CAP

17. REMOVE FRONT DISC BRAKE BLEEDER PLUG

18. INSPECT BRAKE CYLINDER AND PISTON

(a) Check the cylinder bore and piston for rust or scoring.



19. INSPECT PAD LINING THICKNESS

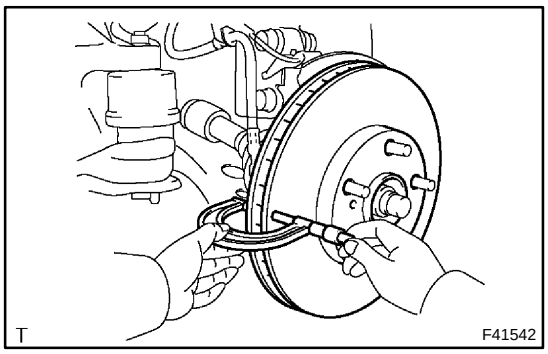
(a) Using a ruler, measure the pad lining thickness.
Standard thickness: 12.0 mm (0.472 in.)
Minimum thickness: 1.0 mm (0.039 in.)

20. INSPECT FRONT DISC BRAKE PAD SUPPORT PLATE

(a) Make sure that they have sufficient rebound, no deformation cracks or wear, and have had all rust and dirt cleaned off.

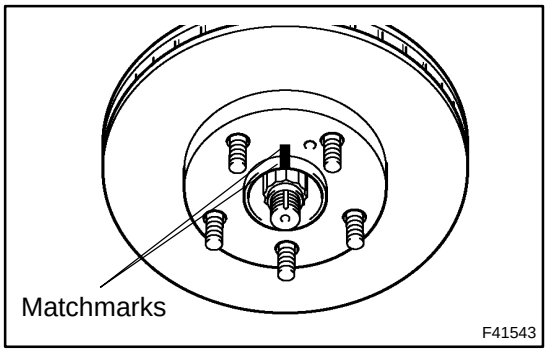
21. INSPECT FRONT DISC BRAKE PAD SUPPORT PLATE

(a) Make sure that they have sufficient rebound, no deformation cracks or wear, and have had all rust and dirt cleaned off.



22. INSPECT DISC THICKNESS

(a) Using a micrometer, measure the disc thickness.
Standard thickness: 28.0 mm (0.433 in.)
Minimum thickness: 26.0 mm (0.039 in.)

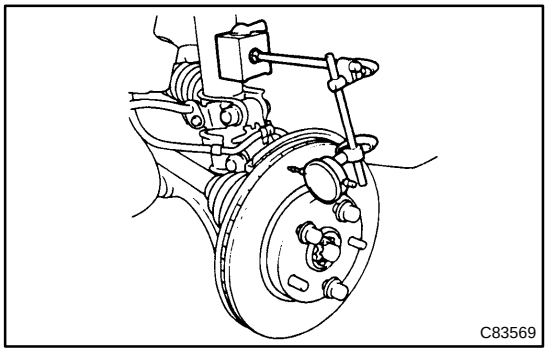


23. REMOVE FRONT DISC

(a) Put matchmarks on the disc and the axle hub.
(b) Remove the disc.

24. INSTALL FRONT DISC

(a) Aligning the matchmarks, install the front disc.
HINT:
When replacing the disc with new one, select the installation position where the disc has the minimum runout.



25. INSPECT DISC RUNOUT

(a) Temporarily fasten the disc with hub nuts.
Torque: 103 N·m (1,050 kgf·cm, 76 ft·lbf)
(b) Using a dial indicator, measure the disc runout 10 mm (0.39 in.) away from the outer edge of the disc.
Maximum disc runout: 0.05 mm (0.0020 in.)
(c) If the disc's runout is maximum value or greater, check the bearing play in the axial direction and check the axle hub runout (See page 30–2). If the bearing play and axle hub runout are not abnormal, adjust the disc runout or grind it on a "On–car" brake lathe.

26. TEMPORARY TIGHTEN FRONT DISC BRAKE BLEEDER PLUG

(a) Temporarily tighten the bleeder plug to the disc brake cylinder.

27. INSTALL FRONT DISC BRAKE BLEEDER PLUG CAP

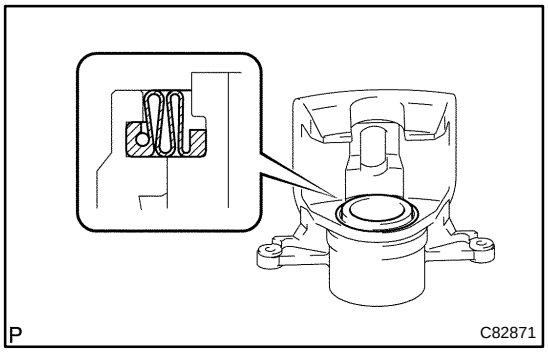
28. INSTALL PISTON SEAL

(a) Apply the lithium soap base glycol grease on a new piston seal.
(b) Install the piston seal to the disc brake cylinder.

29. INSTALL FRONT DISC BRAKE PISTON

(a) Apply the lithium soap base glycol grease on the piston.
(b) Install the piston to the disc brake cylinder.

NOTICE:
Do not screw the piston forcedly in the disc brake cylinder.



30. INSTALL CYLINDER BOOT

(a) Apply the lithium soap base glycol grease on a new cylinder boot. Install the cylinder boot to the disc brake cylinder.

HINT:
Install the boot securely to the grooves of the cylinder and piston.

(b) Using a screwdriver, install the set ring.

NOTICE:
Do not damage the cylinder boot.

31. INSTALL FRONT DISC BRAKE CYLINDER MOUNTING LH

(a) Install the disc brake cylinder mounting LH with the 2 bolts.
Torque: 107 N·m (1,090 kgf·cm, 79 ft·lbf)

32. INSTALL FRONT DISC BRAKE BUSH DUST BOOT

(a) Apply the lithium soap base glycol grease to seal surface of 2 new bush dust boots.
(b) Install the 2 bush dust boots to the disc brake cylinder mounting.

33. INSTALL FRONT DISC BRAKE CYLINDER SLIDE BUSH

(a) Apply the lithium soap base glycol grease to a new cylinder slide bush.
(b) Install the cylinder slide bush to the cylinder slide pin.

34. INSTALL FRONT DISC BRAKE CYLINDER SLIDE PIN

(a) Apply the lithium soap base glycol grease to the sliding part and the seal surface of the 2 cylinder slide pins.
(b) Install the 2 cylinder slide pins to the disc brake cylinder mounting.

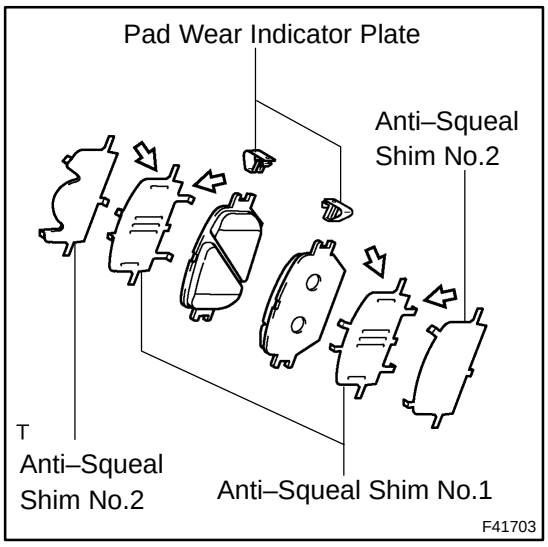
HINT:
Place with the bush side facing down.

35. INSTALL FRONT DISC BRAKE PAD SUPPORT PLATE

(a) Install the upper side front disc brake pad support plate.

36. INSTALL FRONT DISC BRAKE PAD SUPPORT PLATE

(a) Install the bottom side front disc brake pad support plate.



37. INSTALL ANTI SQUEAL SHIM KIT FRONT

NOTICE:

- **When replacing worn pads, the anti–squeal shims must be replaced together with the pads.**
- **Install the shims and pad wear indicator plates correctly of which positions and directions.**

(a) Apply disc brake grease to inside of each anti–squeal shim No.1.
(b) Install the anti–squeal shim No.1 and No.2 on each pad.
(c) Install the pad wear indicator plate to the 2 pads.

38. INSTALL DISC BRAKE PAD KIT FRONT (PAD ONLY)

(a) Install the 2 pads with the pad wear indicator plate facing upward.

NOTICE:

There should be no oil or grease adhering to the friction surfaces of the pads and the disc.

39. INSTALL DISC BRAKE CYLINDER ASSY FR LH

(a) Install the disc brake cylinder with the 2 bolts.
Torque: 34 N·m (350 kgf·cm, 25 ft·lbf)

40. CONNECT FRONT FLEXIBLE HOSE

(a) Install a new gasket and flexible hose with the union bolt.
Torque: 29.4 N·m (300 kgf·cm, 22 ft·lbf)

HINT:

- Gasket has 2 types: 2–piece type and 1–piece type.
- Install the flexible hose lock securely in the lock hole in the disc brake cylinder.

41. FILL RESERVOIR WITH BRAKE FLUID

42. BLEED MASTER CYLINDER(See page 32–4)
SST 09023–00100

43. BLEED BRAKE LINE(See page 32–4)

44. CHECK FLUID LEVEL IN RESERVOIR

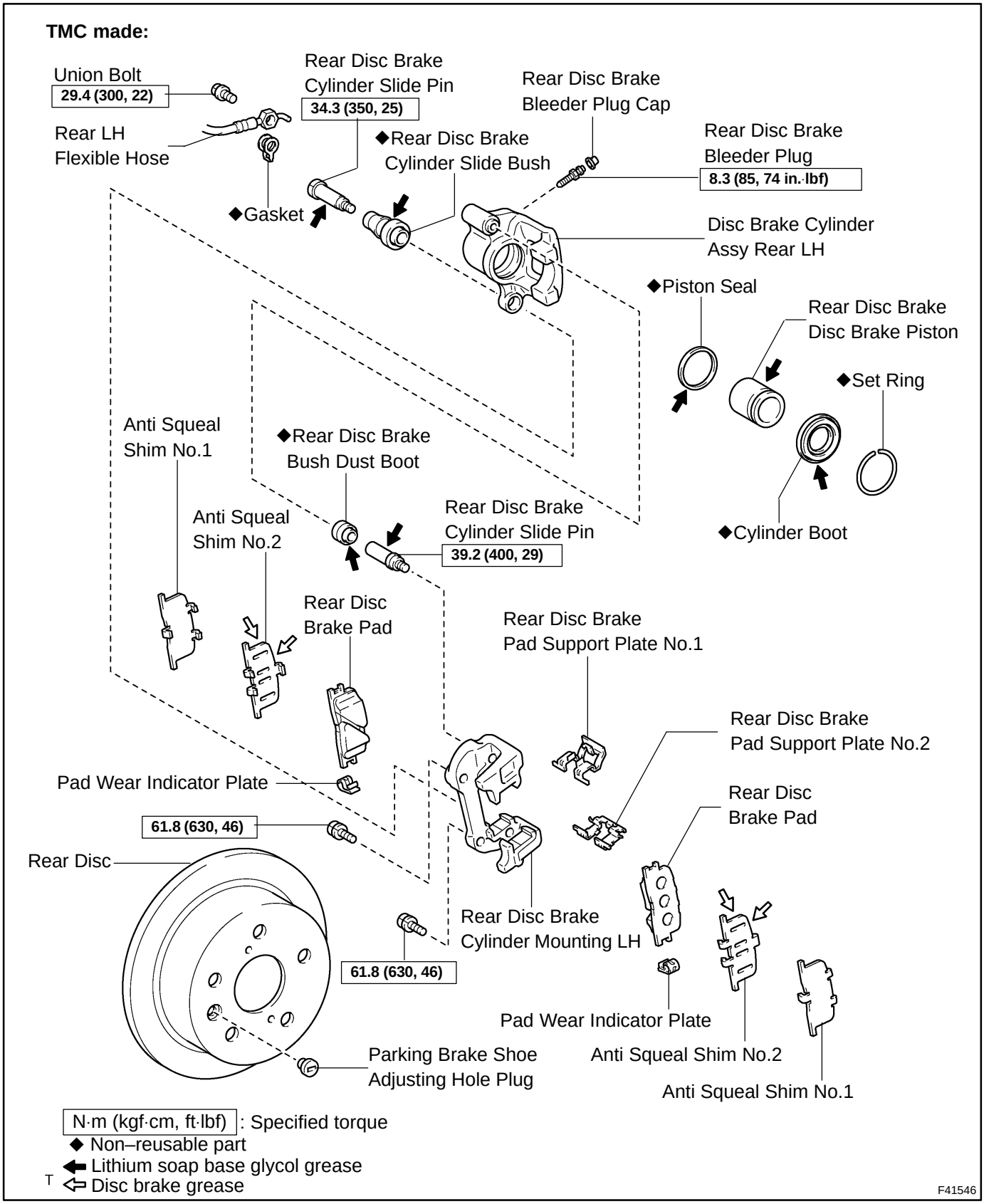
45. CHECK BRAKE FLUID LEAKAGE

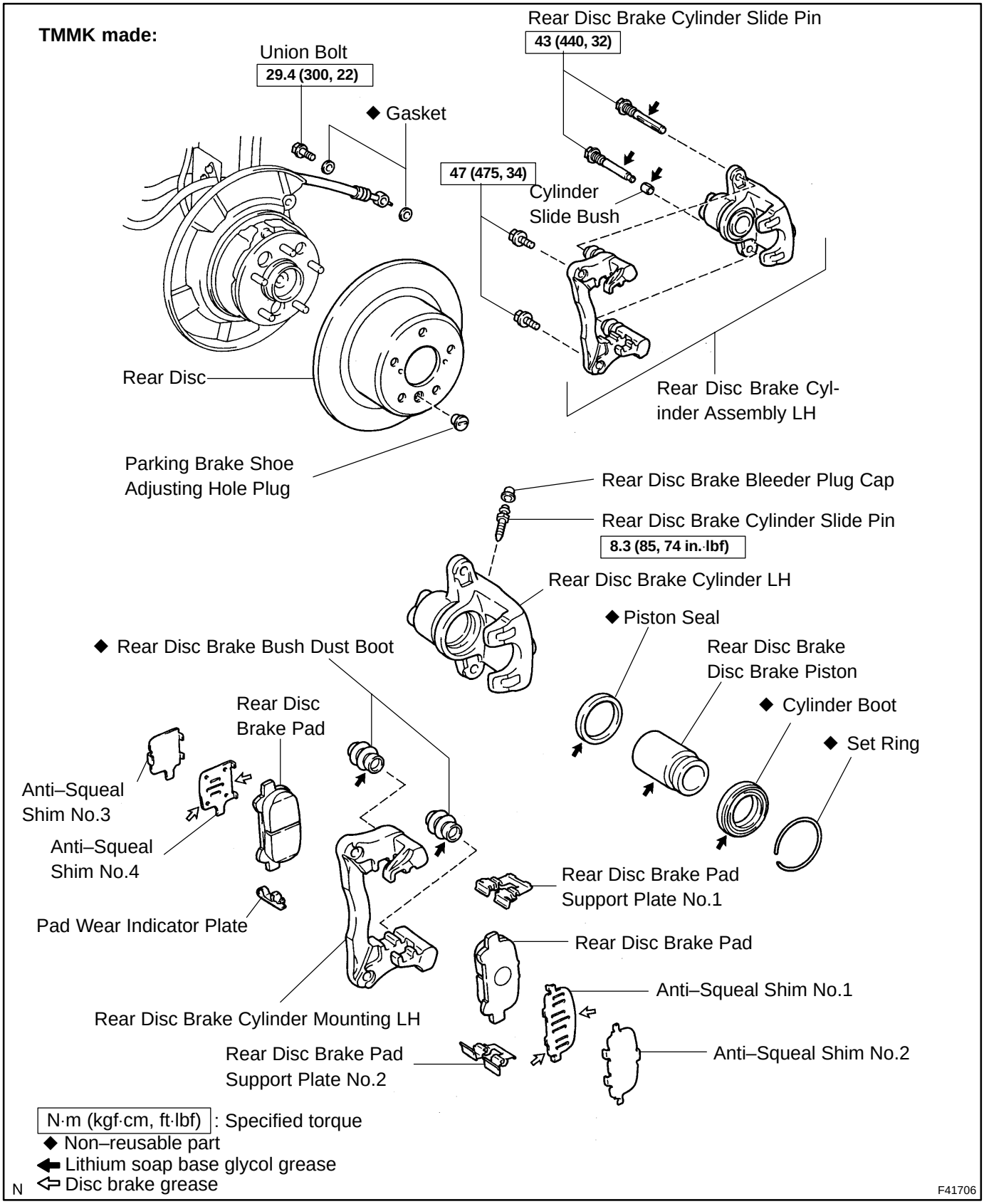
46. INSTALL FRONT WHEEL
Torque: 103 N·m (1,050 kgf·cm, 76 ft·lbf)

REAR DISC BRAKE

COMPONENTS

320D2–01




TMMK made:
Rear Disc Brake Cylinder Slide Pin
43 (440, 32)
Union Bolt
29.4 (300, 22)
◆ Gasket
47 (475, 34)
Cylinder Slide Bush
Rear Disc
Rear Disc Brake Cylinder Assembly LH
Parking Brake Shoe Adjusting Hole Plug
Rear Disc Brake Bleeder Plug Cap
Rear Disc Brake Cylinder Slide Pin
8.3 (85, 74 in.·lbf)
Rear Disc Brake Cylinder LH
◆ Piston Seal
◆ Rear Disc Brake Bush Dust Boot
Rear Disc Brake Disc Brake Piston
◆ Cylinder Boot
◆ Set Ring
Rear Disc Brake Pad
Anti–Squeal Shim No.3
Anti–Squeal Shim No.4
Rear Disc Brake Pad Support Plate No.1
Pad Wear Indicator Plate
Rear Disc Brake Pad
Anti–Squeal Shim No.1
Rear Disc Brake Cylinder Mounting LH
Rear Disc Brake Pad Support Plate No.2
Anti–Squeal Shim No.2
N·m (kgf·cm, ft·lbf) : Specified torque
◆ Non–reusable part
⬅ Lithium soap base glycol grease
⇦ Disc brake grease
N
F41706

OVERHAUL

HINT:

- COMPONENTS: See page 32–31
- Overhaul the RH side by the same procedures with LH side.
- Two types of brake pad exist; one is with slit and the other without slit.

1. REMOVE REAR WHEEL

2. DRAIN BRAKE FLUID

NOTICE:

Wash off the brake fluid immediately if it comes into contact with a painted surface.

3. DISCONNECT REAR LH FLEXIBLE HOSE

(a) Remove the union bolt and a gasket from the disc brake cylinder, then disconnect the flexible hose from the disc brake cylinder.

HINT:

Gasket has 2 types: 2–piece type and 1–piece type.

4. REMOVE REAR DISC BRAKE CYLINDER SLIDE PIN

(a) TMC made:
Remove the cylinder slide pin.

(b) TMMK made:
Remove the cylinder slide pin and cylinder slide bush.

5. REMOVE DISC BRAKE CYLINDER ASSY RR LH

(a) TMC made:
Lift up the disc brake cylinder and remove the disc brake cylinder.

(b) TMMK made:
Remove the cylinder slide pin and disc brake cylinder.

6. REMOVE DISC BRAKE PAD KIT REAR (PAD ONLY)

(a) Remove the 2 brake pads with the anti–squeal shim.

7. REMOVE REAR DISC BRAKE ANTI SQUEAL SHIM KIT

(a) Remove the 2 anti–squeal shims and pad wear indicator from each of 2 brake pads.

(b) TMC made:
Remove the 2 pad wear indicator plates from each of 2 brake pads.

(c) TMMK made:
Remove the pad wear indicator plate from inner pad.

8. REMOVE REAR DISC BRAKE PAD SUPPORT PLATE

(a) Remove the rear disc brake pad support plate No.1.

9. REMOVE REAR DISC BRAKE PAD SUPPORT PLATE

(a) Remove the rear disc brake pad support plate No.2.

10. REMOVE REAR DISC BRAKE BUSH DUST BOOT

(a) TMC made:
Remove the rear disc brake bush dust boot.

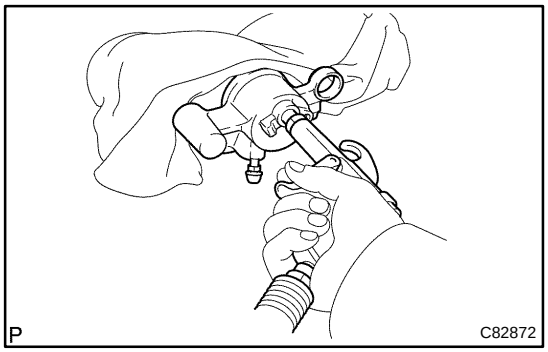
(b) TMMK made:
Remove the 2 rear disc brake bush dust boots.

11. REMOVE REAR DISC BRAKE CYLINDER MOUNTING LH

(a) TMC made:
Using a hexagon wrench (ϕ8 mm), remove the cylinder slide pin.
(b) Remove the 2 bolts and cylinder mounting LH.

12. REMOVE CYLINDER BOOT

(a) Using a screwdriver, remove the set ring and disc cylinder boot.



13. REMOVE REAR DISC BRAKE DISC BRAKE PISTON

(a) Place a piece of cloth or similar, between the piston and the disc brake cylinder.
(b) Use compressed air to remove the piston from the disc brake cylinder.

CAUTION:
Do not place your fingers in front of the piston when using compressed air.
NOTICE:
Do not spatter the brake fluid.

14. REMOVE PISTON SEAL

(a) Using a screwdriver, remove the piston seal from the brake cylinder.

NOTICE:
Do not damage the inner cylinder and the cylinder groove.

15. REMOVE REAR DISC BRAKE BLEEDER PLUG CAP

16. REMOVE REAR DISC BRAKE BLEEDER PLUG

17. INSPECT BRAKE CYLINDER AND PISTON

(a) Check the cylinder bore and piston for rust or scoring.

18. INSPECT PAD LINING THICKNESS

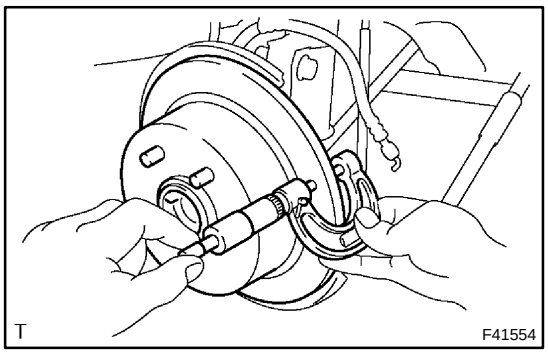
(a) Using a ruler, measure the pad lining thickness.
Standard thickness: 10.0 mm (0.472 in.)
Minimum thickness: 1.0 mm (0.039 in.)

19. INSPECT REAR DISC BRAKE PAD SUPPORT PLATE

(a) Make sure that they have sufficient rebound, no deformation cracks or wear, and have had all rust and dirt cleaned off.

20. INSPECT REAR DISC BRAKE PAD SUPPORT PLATE

(a) Make sure that they have sufficient rebound, no deformation cracks or wear, and have had all rust and dirt and cleaned off.



21. INSPECT DISC THICKNESS

(a) Using a micrometer, measure the disc thickness.
Standard thickness: 12.0 mm (0.472 in.)
Minimum thickness: 10.5 mm (0.413 in.)

22. REMOVE PARKING BRAKE SHOE ADJUSTING HOLE PLUG

23. REMOVE REAR DISC

(a) Put matchmarks on the disc and the axle hub.
(b) Remove the disc.

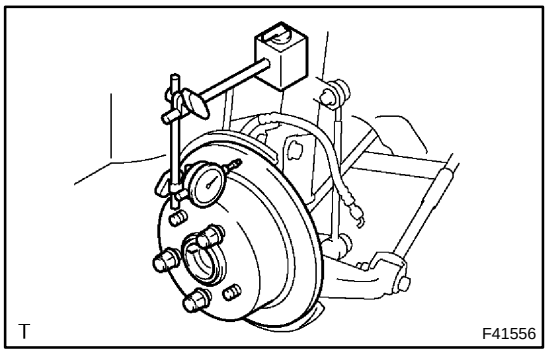
24. INSTALL REAR DISC

(a) Aligning the matchmarks, install the rear disc.

HINT:

When replacing the disc with new one, select the installation position where the disc has the minimum runout.

25. INSTALL PARKING BRAKE SHOE ADJUSTING HOLE PLUG



26. INSPECT DISC RUNOUT

(a) Temporarily fasten the disc with hub nuts.
Torque: 103 N·m (1,050 kgf·cm, 76 ft·lbf)
(b) Using dial indicator, measure the disc runout 10 mm (0.39 in.) away from the outer edge of the disc.
Maximum disc runout: 0.15 mm (0.0059 in.)
(c) If the disc's runout is maximum value or greater, check the bearing play in the axial direction and check the axle hub runout. (See page 30–2)If the bearing play and axle hub runout are not abnormal, adjust the disc runout or grind it on a "On–car" brake lathe.

27. ADJUST PARKING BRAKE SHOE CLEARANCE(See page 33–21)

28. TEMPORARY TIGHTEN REAR DISC BRAKE BLEEDER PLUG

(a) Temporarily tighten the bleeder plug to the disc brake cylinder.

29. INSTALL REAR DISC BRAKE BLEEDER PLUG CAP

30. INSTALL PISTON SEAL

(a) Apply the lithium soap base glycol grease on a new piston seal.
(b) Install the piston seal to the disc brake cylinder.

31. INSTALL REAR DISC BRAKE DISC BRAKE PISTON

(a) Apply the lithium soap base glycol grease on the piston.
(b) Install the piston to the disc brake cylinder.

NOTICE:
Do not screw the piston forcedly in the disc brake cylinder.

32. INSTALL CYLINDER BOOT

(a) Apply the lithium soap base glycol grease on a new cylinder boot.
(b) Install the cylinder boot to the disc brake cylinder.

HINT:
Install the boot securely to the grooves of the cylinder and piston.

(c) Using a screwdriver, install a new set ring.

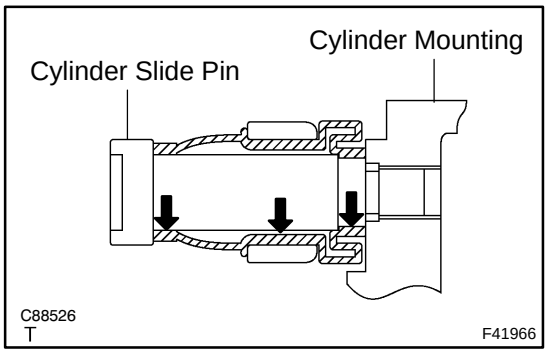
NOTICE:
Do not damage the cylinder boot.

33. INSTALL REAR DISC BRAKE CYLINDER MOUNTING LH

(a) Install the cylinder mounting LH with the 2 bolts.
Torque:
TMC made: 61.8 N·m (630 kgf·cm, 46 ft·lbf)
TMMK made: 47 N·m (475 kgf·cm, 34 ft·lbf)

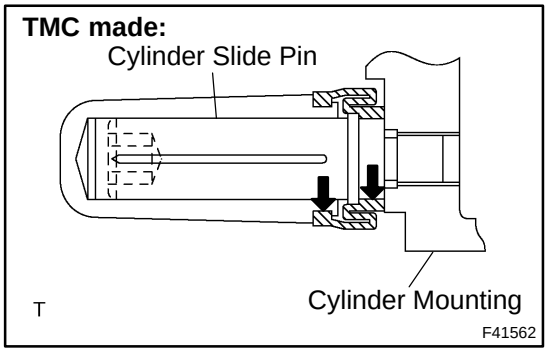
34. INSTALL REAR DISC BRAKE CYLINDER SLIDE PIN

(a) TMC made:
Using a hexagon wrench (8 mm), install the cylinder slide pin.
Torque: 39.2 N·m (400 kgf·cm, 29 ft·lbf)
(b) TMMK made:
Install the cylinder slide pin with the cylinder slide bush.
Torque: 43 N·m (440 kgf·cm, 32 ft·lbf)



35. INSTALL REAR DISC BRAKE CYLINDER SLIDE BUSH(TMC MADE)

(a) Apply the lithium soap base glycol grease on a new cylinder slide bush.
(b) Install the cylinder slide bush to the disc brake cylinder assy.



36. INSTALL REAR DISC BRAKE BUSH DUST BOOT

(a) TMC made:
Install the rear disc brake bush dust boot.
(1) Apply the lithium soap base glycol grease to seal surface of a new bush dust boot.
(2) Install the bush dust boot to the cylinder slide pin.
(b) TMMK made:
Install the rear disc brake bush dust boot.
(1) Apply the lithium soap base glycol grease to seal surface of a 2 new bush dust boots.
(2) Install the 2 bush dust boots to the each cylinder slide pin.

37. INSTALL REAR DISC BRAKE PAD SUPPORT PLATE

(a) Install the rear disc brake pad support plate No.1.

38. INSTALL REAR DISC BRAKE PAD SUPPORT PLATE

(a) Install the rear disc brake pad support plate No.2.

39. INSTALL REAR DISC BRAKE ANTI SQUEAL SHIM KIT

(a) Coat the both sides of No.1 anti–squeal shim with pad grease all over, and install the shim together with No.2 anti–squeal shim to each pad.

(b) TMC made:
Install the 2 pad wear indicator plates to the each of 2 brake pads.

NOTICE:
When replacing worn pads, the anti–squeal shims must be replaced together with the pads.

(c) TMMK made:
Install the pad wear indicator plate to the inner pad.

NOTICE:
When replacing worn pads, the anti–squeal shims must be replaced together with the pads.

40. INSTALL DISC BRAKE PAD KIT REAR (PAD ONLY)

(a) Install the 2 brake pads with the anti–squeal shim.

NOTICE:
There should be no oil or grease on to the friction surface of the pads and the disc.

41. INSTALL DISC BRAKE CYLINDER ASSY RR LH(TMC MADE)

(a) Apply the lithium soap base glycol grease to the cylinder slide pin.

(b) Install the disc brake cylinder assembly rear LH to the cylinder slide pin.

42. INSTALL REAR DISC BRAKE CYLINDER SLIDE PIN

(a) Apply the lithium soap base glycol grease to the cylinder slide pin.

(b) Install and torque the cylinder slide pin to the disc brake cylinder assembly.
Torque:
TMC made: 34.3 N·m (350 kgf·cm, 25 ft·lbf)
TMMK made: 43 N·m (440 kgf·cm, 32 ft·lbf)

43. CONNECT REAR LH FLEXIBLE HOSE

(a) Connect a new gasket and flexible hose with the union bolt.
Torque: 29.4 N·m (300 kgf·cm, 22 ft·lbf)

44. FILL RESERVOIR WITH BRAKE FLUID

45. BLEED MASTER CYLINDER(See page 32–4)
SST 09023–00100

46. BLEED BRAKE LINE(See page 32–4)

47. CHECK FLUID LEVEL IN RESERVOIR

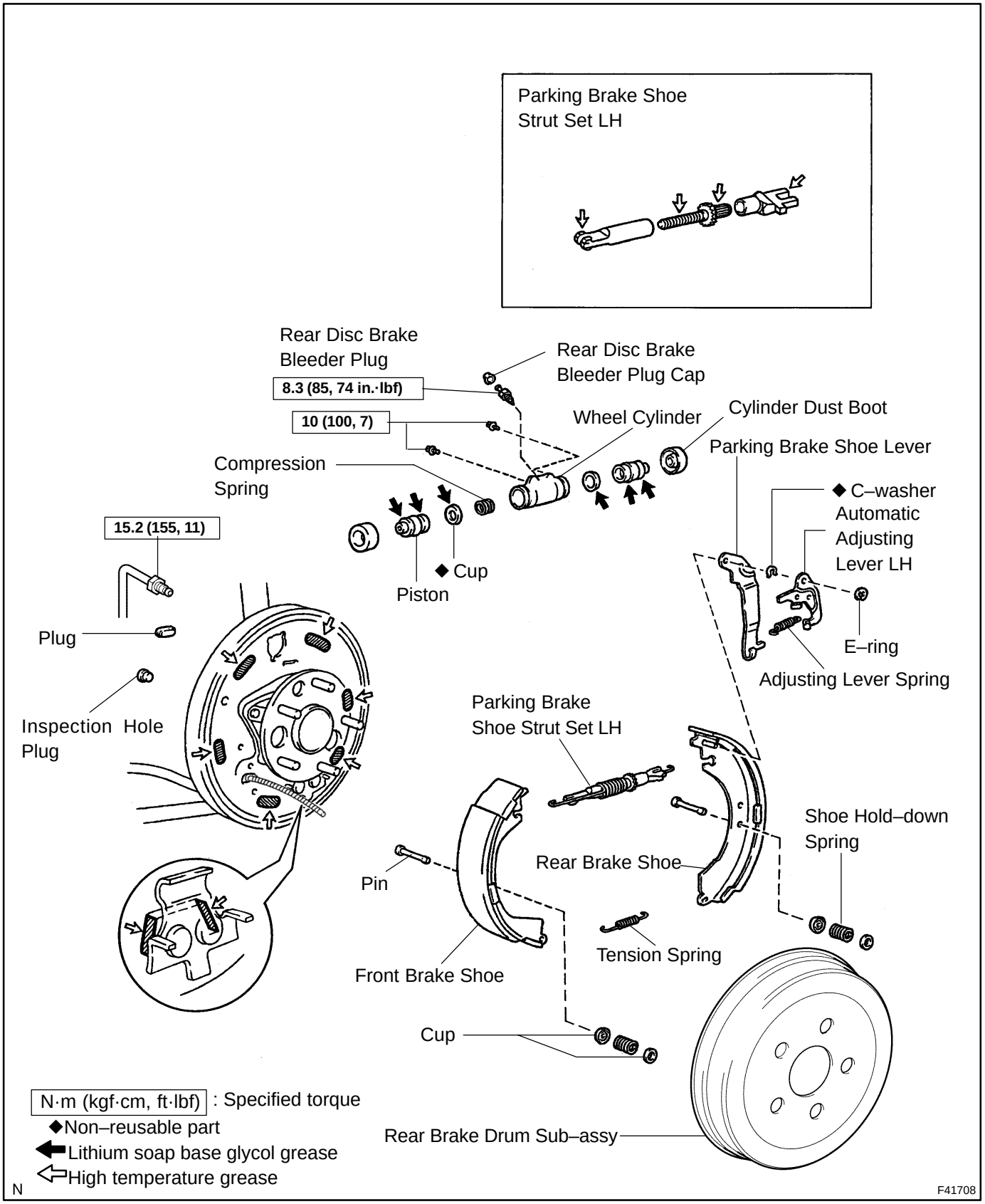
48. CHECK BRAKE FLUID LEAKAGE

49. INSTALL REAR WHEEL
Torque: 103 N·m (1,050 kgf·cm, 76 ft·lbf)

REAR DRUM BRAKE

COMPONENTS

320D4–01



OVERHAUL

HINT:

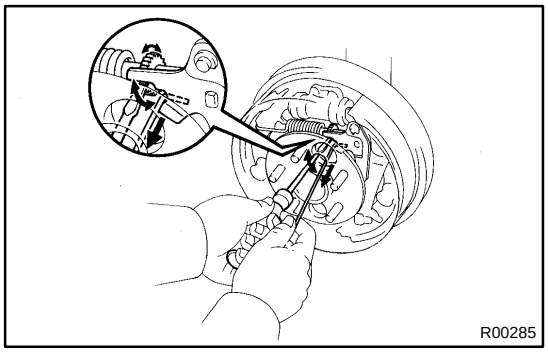
- COMPONENTS: See page 32–38
- Overhaul the RH side by the same procedures with LH side.

1. REMOVE REAR WHEEL

2. DRAIN BRAKE FLUID

NOTICE:

Wash off the brake fluid immediately if it comes into contact with a painted surface.



3. REMOVE REAR BRAKE DRUM SUB–ASSY

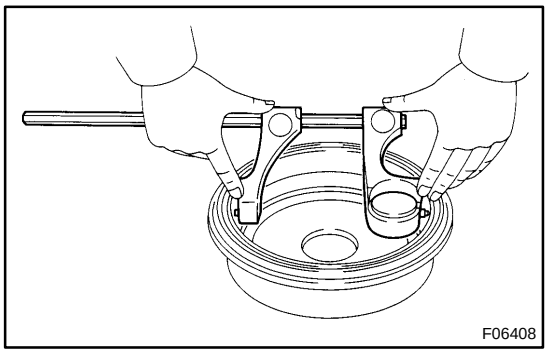
HINT:

If the brake drum cannot be removed easily, do the following steps.

(a) Insert a bent wire or equivalent through the hole in the brake drum, and hold the automatic adjusting lever away from the adjuster.

(b) Using a screwdriver, reduce the brake shoe adjustment by turning the adjuster.

(c) Remove the rear brake drum sub–assy.



4. INSPECT BRAKE DRUM INSIDE DIAMETER

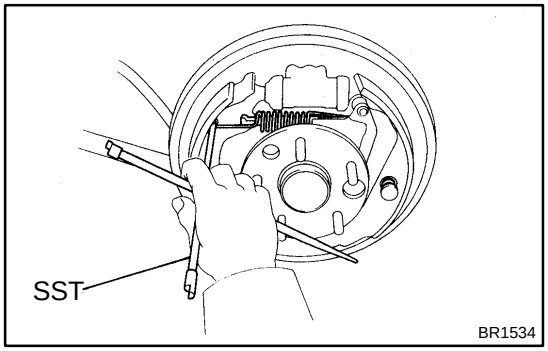
(a) Using a brake drum gauge or equivalent, measure the inside diameter of the drum.

Standard inside diameter: 228.0 mm (8.976 in.)

Maximum inside diameter: 230.6 mm (9.079 in.)

5. REMOVE TENSION SPRING

(a) Remove the tension spring from the front brake shoe and rear brake shoe.



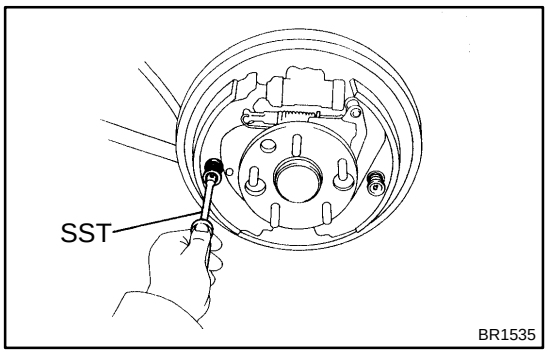
6. SEPARATE PARKING BRAKE SHOE STRUT SET LH

(a) Using SST, disconnect the shoe return spring and separate the parking brake shoe strut set LH.

SST 09703–30010

NOTICE:

Do not damage the wheel cylinder boot.

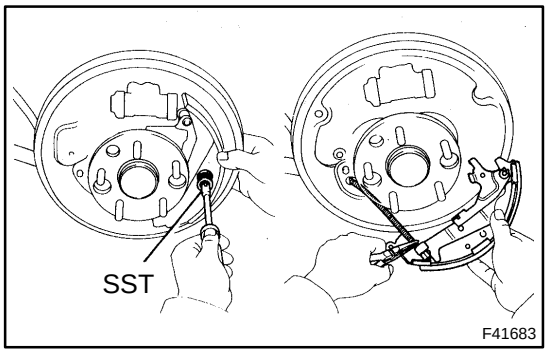


7. REMOVE FRONT BRAKE SHOE

(a) Using SST, remove the 2 cups, shoe hold–down spring and pin.
SST 09718–00010

(b) Remove the front brake shoe.

8. REMOVE PARKING BRAKE SHOE STRUT SET LH



9. REMOVE REAR BRAKE SHOE

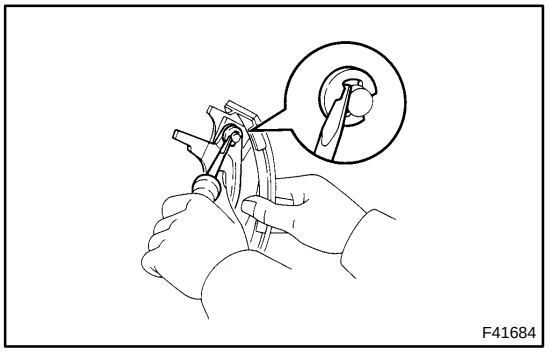
(a) Using SST, remove the 2 cups, shoe hold–down spring and pin.
SST 09718–00010

(b) Using a screwdriver, disconnect the parking brake cable from the anchor plate.

(c) Using needle–nose pliers, disconnect the parking brake cable from the lever and remove the rear shoe.

NOTICE:

Do not allow oil or grease on the rubbing face.

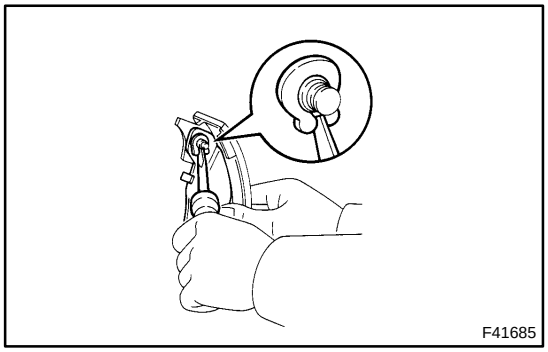


10. REMOVE REAR BRAKE AUTOMATIC ADJUST LEVER LH

(a) Remove the adjusting lever spring.

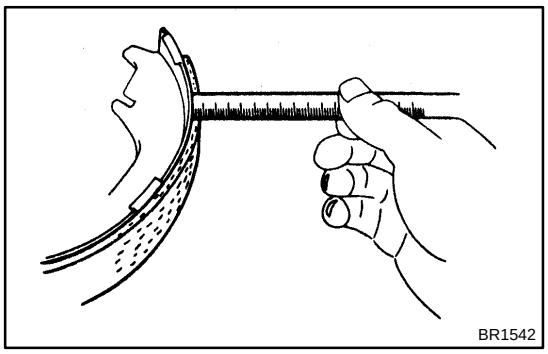
(b) Remove the E–ring.

(c) Remove the automatic adjusting lever.



11. REMOVE PARKING BRAKE SHOE LEVER LH

(a) Using screwdriver, remove the C–washer and parking brake shoe lever.



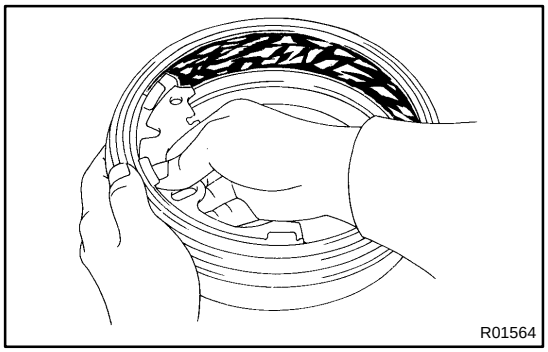
12. INSPECT REAR DRUM BRAKE SHOE LINING THICKNESS

(a) Using a ruler, measure the shoe lining thickness.
Standard thickness: 5.0 mm (0.197 in.)
Minimum thickness: 1.0 mm (0.039 in.)

If the thickness is less than the minimum, or shows signs of uneven wear, replace the brake shoes.

HINT:

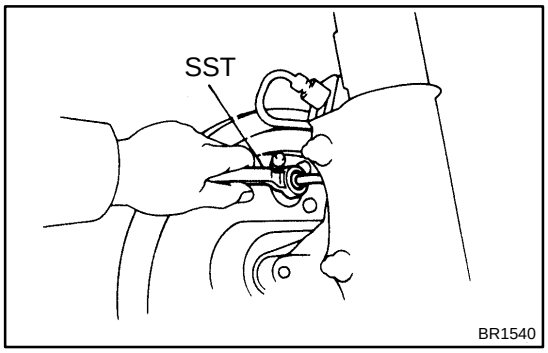
If any of the brake shoes have to be replaced, replace all of the rear brake shoes in order to maintain even braking.



13. INSPECT BRAKE DRUM AND REAR DRUM BRAKE SHOE LINING FOR PROPER CONTACT

(a) Apply chalk to the inside surface of the drum, then grind drum the brake shoe lining to fit.

If the contact between the drum and the shoe lining is improper, repair it using a brake shoe grinder or replace the brake shoe assembly.



14. REMOVE LH, FRONT OR UPPER REAR WHEEL BRAKE CYLINDER ASSY

(a) Using SST, disconnect the brake tube, use a container to catch brake fluid.
SST 09751–36011

(b) Remove the 2 bolts and wheel cylinder.

15. REMOVE REAR WHEEL CYLINDER CUP KIT

(a) Remove the 2 cylinder dust boots from the wheel cylinder.
(b) Remove the 2 pistons and compression spring.
(c) Remove the 2 cups from the each piston.

16. INSPECT BRAKE WHEEL CYLINDER

(a) Check the cylinder bore and piston for rust or scoring.

17. REMOVE REAR DISC BRAKE BLEEDER PLUG CAP

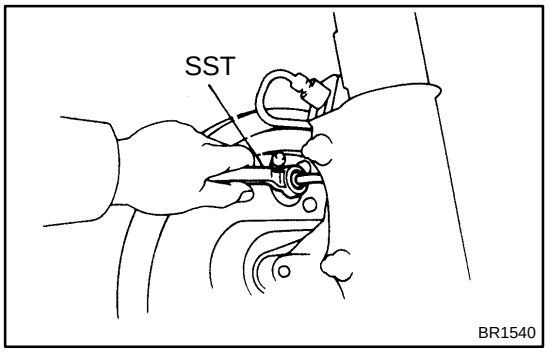
18. REMOVE REAR DISC BRAKE BLEEDER PLUG

19. TEMPORARY TIGHTEN REAR DISC BRAKE BLEEDER PLUG

20. INSTALL REAR DISC BRAKE BLEEDER PLUG CAP

21. INSTALL REAR WHEEL CYLINDER CUP KIT

(a) Apply the lithium soap base glycol grease to the parts indicates by arrows (See page 32–38).
(b) Install the 2 wheel cylinder cups to each piston.
(c) Install the compression spring and 2 pistons to the wheel cylinder.
(d) Install are 2 new cylinder dust boots to the wheel cylinder.

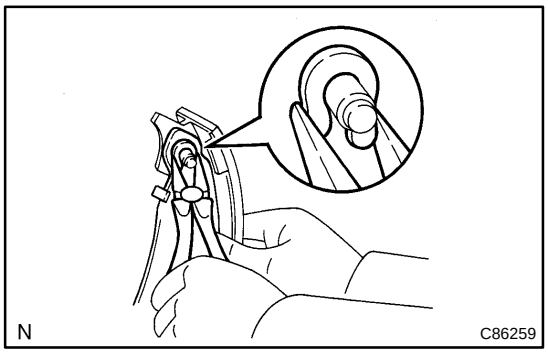


22. INSTALL LH, FRONT OR UPPER REAR WHEEL BRAKE CYLINDER ASSY

(a) Install the wheel cylinder with the 2 bolts.
Torque: 10 N·m (100 N·m, 7 ft·lbf)
(b) Using SST, connect the brake tube.
SST 09751–36011
Torque: 15 N·m (155 N·m, 11 ft·lbf)

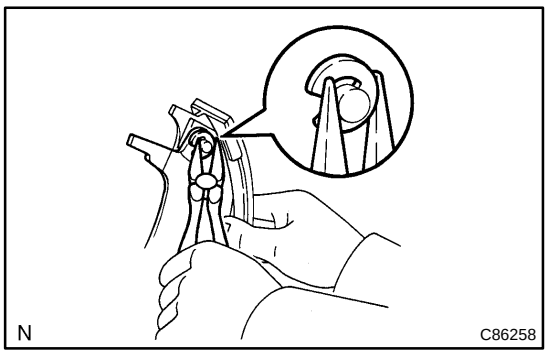
23. APPLICATION HIGH TEMPERATURE GREASE

(a) Apply the high temperature grease to the parts indicates by arrows (See page 32–38).



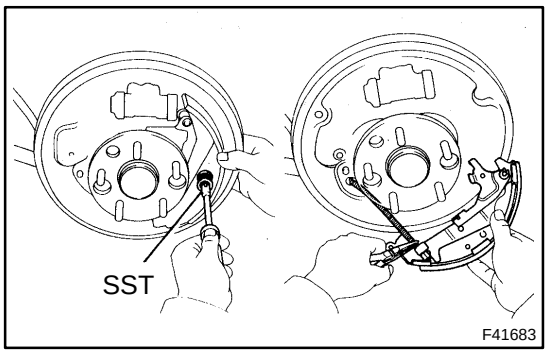
24. INSTALL PARKING BRAKE SHOE LEVER LH

(a) Install the parking brake shoe lever with a new C–washer.



25. INSTALL REAR BRAKE AUTOMATIC ADJUST LEVER LH

(a) Install the automatic adjust lever and automatic adjust lever spring to the rear brake shoe with the E–ring.



26. INSTALL REAR BRAKE SHOE

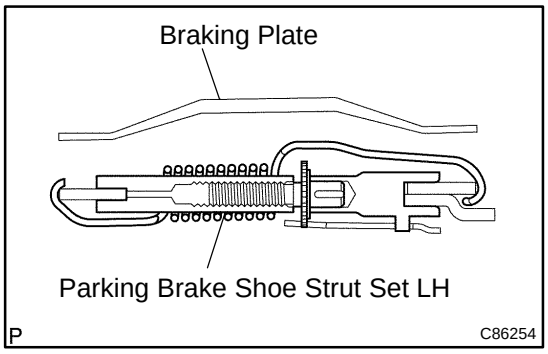
(a) Using needle–nose pliers, connect the parking brake cable to the parking brake shoe lever.

(b) Using a screwdriver, connect the paring brake cable to the anchor plate.

(c) Using SST, install the rear brake shoe, pin, shoe hold–down spring and 2 cups.
SST 09718–00010

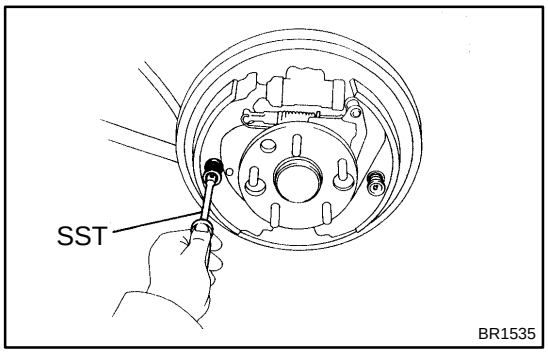
27. INSTALL PARKING BRAKE SHOE STRUT SET LH

(a) Apply the high temperature grease to the part indicated by arrow (See page 32–38).



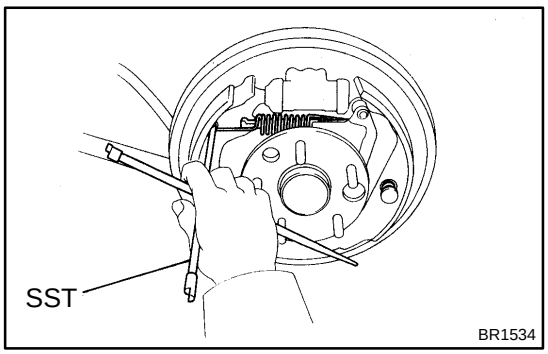
(b) Install the parking brake shoe strut set LH as shown in the installation.

(c) Connect the shoe return spring to the rear shoe.



28. INSTALL FRONT BRAKE SHOE

(a) Using SST, install the front brake shoe, pin, shoe hold–down spring and cup.
SST 09718–00010



29. CONNECT PARKING BRAKE SHOE STRUT SET LH

(a) Using SST, connect the tension spring to the front and rear brake shoe.
SST 09703–30010

30. INSTALL TENSION SPRING

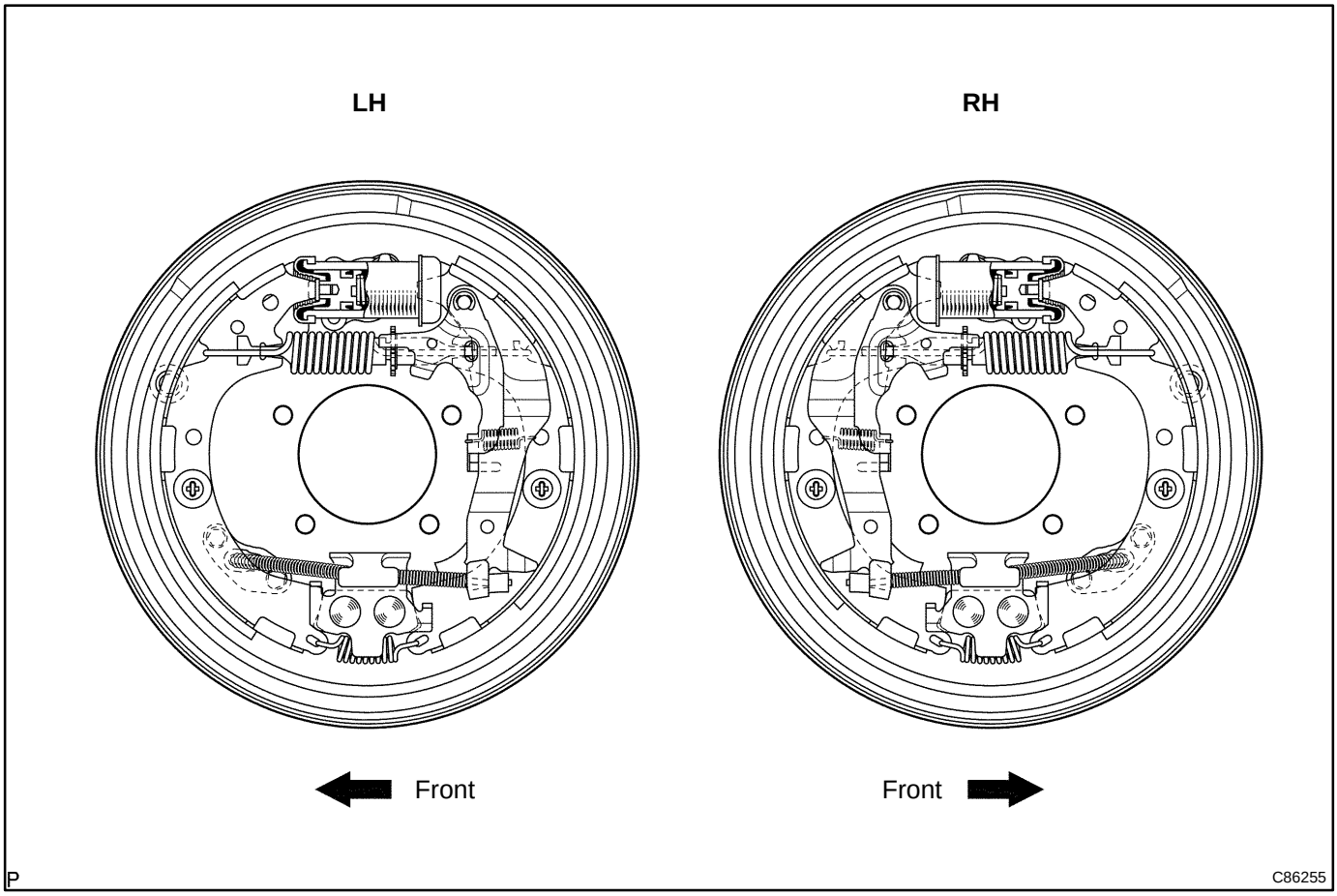
(a) Connect the tension spring to the front brake shoe.

31. CHECK REAR DRUM BRAKE INSTALLATION

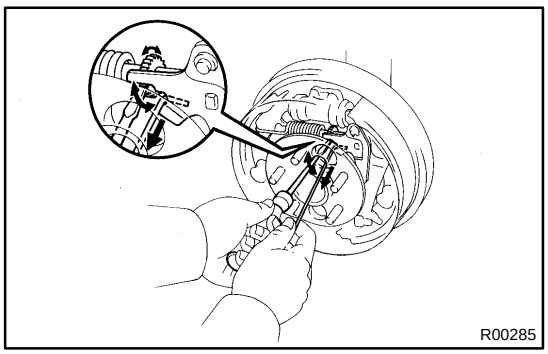
(a) Check that each part is installed properly.

NOTICE:

There should be no oil or grease adhering to the friction surfaces of the shoe lining and drum.



32. INSTALL REAR BRAKE DRUM SUB–ASSY



33. ADJUST REAR DRUM BRAKE SHOE CLEARANCE

HINT:

If the brake drum cannot be removed easily, do the following steps.

(a) Insert a bent wire or equivalent through the hole in the brake drum, and hold the automatic adjusting lever away from the adjuster.

(b) Using a screwdriver, reduce the brake shoe adjustment by turning the adjuster.

34. FILL RESERVOIR WITH BRAKE FLUID

35. BLEED MASTER CYLINDER(See page 32–4)

SST 09023–00100

36. BLEED BRAKE LINE(See page 32–4)

37. CHECK FLUID LEVEL IN RESERVOIR

38. CHECK BRAKE FLUID LEAKAGE
39. INSTALL REAR WHEEL
Torque: 103 N·m (1,050 kgf·cm, 76 ft·lbf)
40. CHECK PARKING BRAKE LEVER TRAVEL (LEVER TYPE PARKING BRAKE)(See page 33–2)
41. CHECK PARKING BRAKE PEDAL TRAVEL (PEDAL TYPE PARKING BRAKE)(See page 33–2)
42. ADJUST PARKING BRAKE LEVER TRAVEL (LEVER TYPE PARKING BRAKE)
(See page 33–2)
43. ADJUST PARKING BRAKE PEDAL TRAVEL (PEDAL TYPE PARKING BRAKE)
(See page 33–2)

BRAKE ACTUATOR ASSY

3203J–02

ON–VEHICLE INSPECTION

1. CONNECT HAND–HELD TESTER:

(a) Connect the hand–held tester to the DLC3.

(b) Start the engine and run it at idle.

(c) Select the ACTIVE TEST mode on the hand–held tester.

HINT:

Please refer to the hand–held tester operator's manual for further details.

2. INSPECT ACTUATOR MOTOR OPERATION

(a) With the motor relay ON, check the actuator motor operation noise.

(b) Turn the motor relay OFF.

(c) Depress the brake pedal and hold it for about 15 seconds. Check that the brake pedal cannot be depressed.

(d) With the motor relay ON, check that the pedal does not pulsate.

NOTICE:

Do not keep motor relay ON for more than 5 seconds continuously. When operating it continuously, set the interval of more than 20 seconds.

(e) Turn the motor relay OFF and release the brake pedal.

3. INSPECT RIGHT FRONT WHEEL OPERATION

NOTICE:

Never turn ON the solenoid which is not described below.

(a) With the brake pedal depressed, perform the following operations.

(b) Turn the SFRH and SFRR solenoid ON simultaneously, and check that the pedal cannot be depressed.

NOTICE:

Do not keep solenoid ON for more than 10 seconds continuously. When operating it continuously, set the interval of more than 20 seconds.

(c) Turn the SFRH and SFRR solenoid OFF simultaneously, and check that the pedal can be depressed.

(d) Turn the motor relay ON, and check that the pedal returns.

NOTICE:

Do not keep motor relay ON for more than 5 seconds continuously. When operating it continuously, set the interval of more than 20 seconds.

(e) Turn the motor relay OFF and release the brake pedal.

4. INSPECT OTHER WHEEL OPERATION

(a) As in the same procedure, check the solenoids of other wheels.

HINT:

Left front wheel: SFLH, SFLR

Right rear wheel: SRRH, SRRR

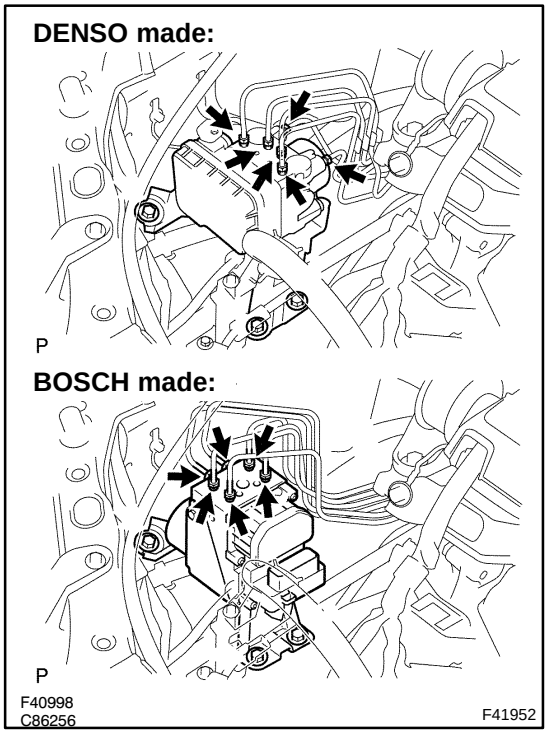
Left rear wheel: SRLH, SRLR

REPLACEMENT

1. DRAIN BRAKE FLUID

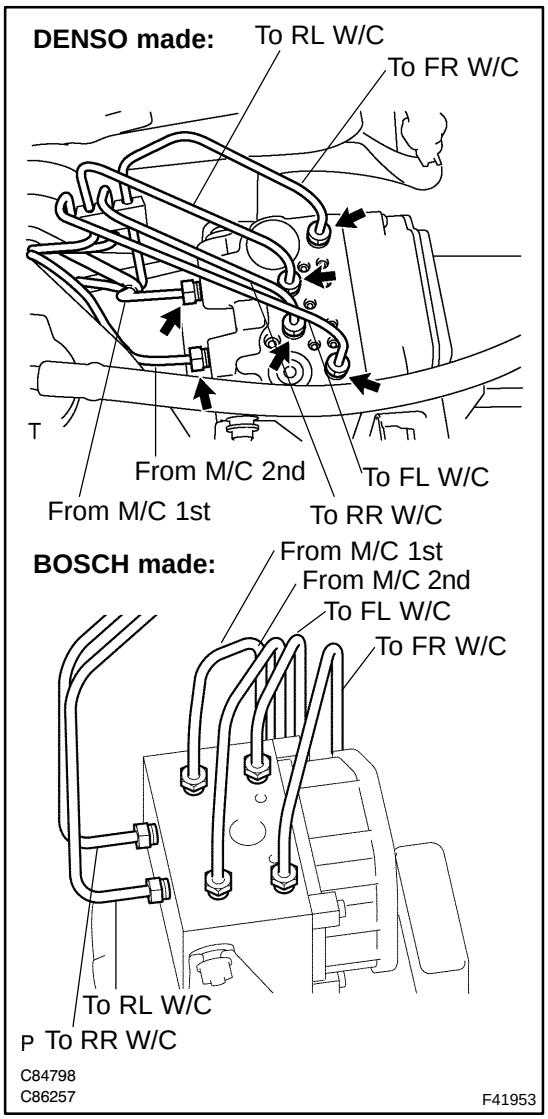
NOTICE:

Wash off the brake fluied immediately if it comes into contact with a painted surface.



2. REMOVE BRAKE ACTUATOR WITH BRACKET

(a) Using SST, disconnect the 6 brake lines from the actuator.



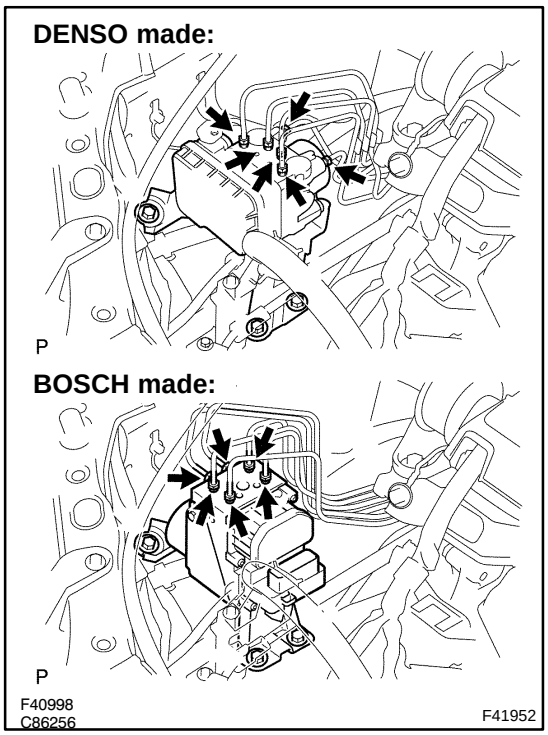
(b) Use tags or make a memo to identify the place to reconnect.
(c) Disconnect the brake actuator connector.
(d) Remove the 3 nuts and brake actuator with bracket.

3. REMOVE BRAKE ACTUATOR ASSY

(a) Remove the 2 nuts and brake actuator from the bracket.
(b) Remove the 2 holders and 3 cushions from the brake actuator.

4. INSTALL BRAKE ACTUATOR ASSY

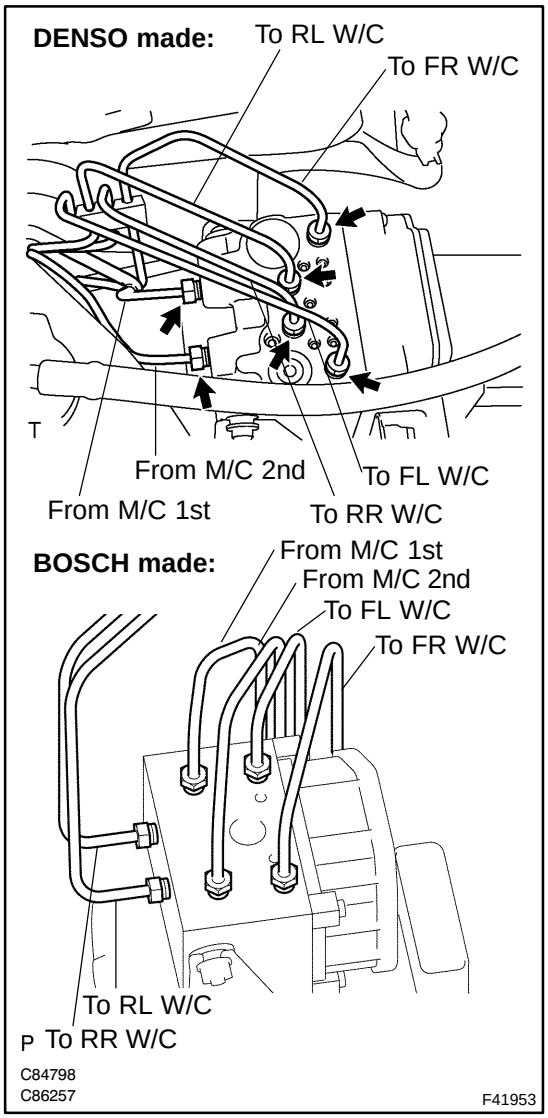
(a) Install the 3 cushions and 2 holders to the brake actuator.
(b) Install the brake actuator to the bracket with the 2 nuts.
Torque: 5.4 N·m (55 kgf·cm, 48 in.·lbf)



5. INSTALL BRAKE ACTUATOR WITH BRACKET

(a) Install the brake actuator with the 3 nuts.
Torque: 19 N·m (194 kgf·cm, 14 ft·lbf)

(b) Connect the brake actuator connector.



(c) Using SST, connect the each brake line to the correct position of brake actuator, as shown in the illustration.
SST 09023–00100
Torque: 15 N·m (155 kgf·cm, 11 ft·lbf)

6. FILL RESERVOIR WITH BRAKE FLUID

7. BLEED MASTER CYLINDER(See page 32–4)

SST 09023–00100

8. BLEED BRAKE LINE(See page 32–4)

9. CHECK FLUID LEVEL IN RESERVOIR

10. CHECK BRAKE FLUID LEAKAGE

11. CHECK OPERATION OF BRAKE ACTUATOR(See page 32–46)

ABS & TRACTION ACTUATOR ASSY (w/ VSC)

3203L–02

ON–VEHICLE INSPECTION

1. CONNECT HAND–HELD TESTER:

(a) Connect the hand–held tester to the DLC3.

(b) Start the engine and run it at idle.

(c) Select the ACTIVE TEST mode on the hand–held tester.

HINT:

Please refer to the hand–held tester operator's manual for further details.

2. INSPECT ACTUATOR MOTOR OPERATION

(a) With the motor relay ON, check the actuator motor operation noise.

(b) Turn the motor relay OFF.

(c) Depress the brake pedal and hold it for about 15 seconds. Check that the brake pedal cannot be depressed.

(d) With the motor relay ON, check that the pedal does not pulsate.

NOTICE:

Do not keep motor relay ON for more than 5 seconds continuously. When operating it continuously, set the interval of more than 20 seconds.

(e) Turn the motor relay OFF and release the brake pedal.

3. INSPECT RIGHT FRONT WHEEL OPERATION

NOTICE:

Never turn ON the solenoid which is not described below.

(a) With the brake pedal depressed, perform the following operations.

(b) Turn the SFRH and SFRR solenoid ON simultaneously, and check that the pedal cannot be depressed.

NOTICE:

Do not keep solenoid ON for more than 10 seconds continuously. When operating it continuously, set the interval of more than 20 seconds.

(c) Turn the SFRH and SFRR solenoid OFF simultaneously, and check that the pedal can be depressed.

(d) Turn the motor relay ON, and check that the pedal returns.

NOTICE:

Do not keep motor relay ON for more than 5 seconds continuously. When operating it continuously, set the interval of more than 20 seconds.

(e) Turn the motor relay OFF and release the brake pedal.

4. INSPECT OTHER WHEEL OPERATION

(a) As in the same procedure, check the solenoids of other wheels.

HINT:

Left front wheel: SFLH, SFLR

Right rear wheel: SRRH, SRRR

Left rear wheel: SRLH, SRLR

REPLACEMENT

1. DRAIN BRAKE FLUID

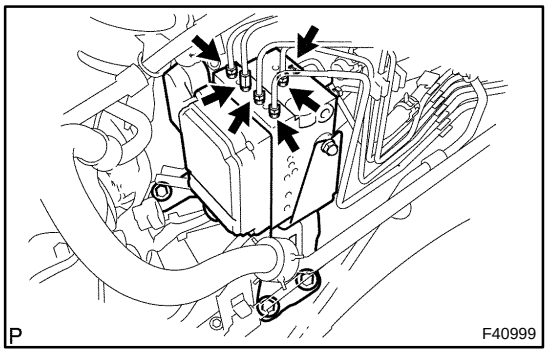
NOTICE:

Wash off the brake fluied immediately if it comes into contact with a painted surface.

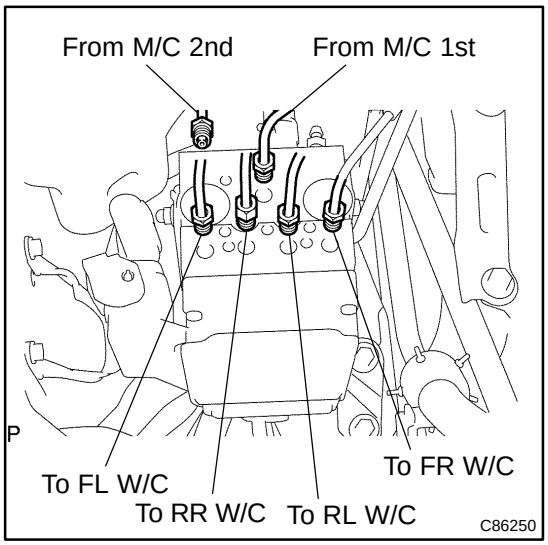
2. REMOVE ABS & TRACTION ACTUATOR ASSY WITH BRACKET

(a) Slide the clip and disconnect the actuator No. 1 hose from the actuator.

(b) Disconnect the master cylinder pressure sensor connector and harness clamp.



(c) Using SST, disconnect the 6 brake lines from the actuator.
SST 09023–00100



(d) Use tags or make a memo to identify the place to reconnect.

(e) Disconnect the actuator connector.

(f) Remove the 3 nuts and brake actuator with bracket.

3. REMOVE ABS & TRACTION ACTUATOR ASSY

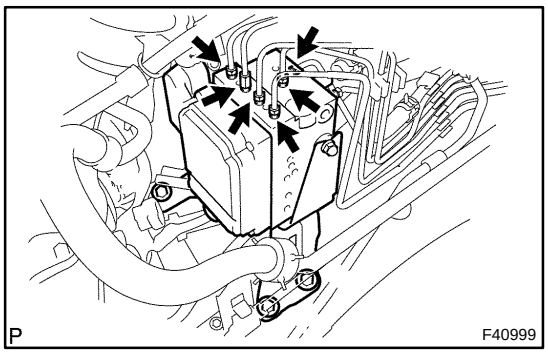
(a) Remove the 2 nuts and ABS & TRACTION actuator from the bracket.

(b) Remove the 2 holders and 3 cushions from the actuator.

4. INSTALL ABS & TRACTION ACTUATOR ASSY

(a) Install the 3 cushions and 2 holders to the ABS & TRACTION actuator.

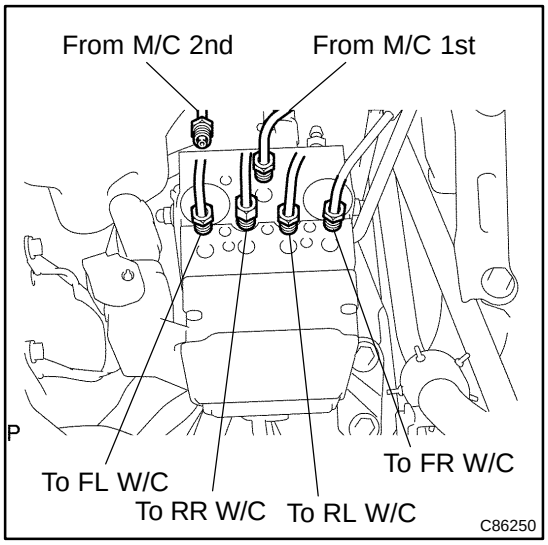
(b) Install the actuator to the bracket with the 2 nuts.
Torque: 5.4 N·m (55 kgf·cm, 48 in.·lbf)



5. INSTALL ABS & TRACTION ACTUATOR ASSY WITH BRACKET

(a) Install the brake actuator with the 3 nuts.
Torque: 19 N·m (194 kgf·cm, 14 ft·lbf)

(b) Connect the brake actuator connector.



(c) Using SST, connect the each brake line to the correct position of brake actuator, as shown in the illustration.
SST 09023–00100
Torque: 15 N·m (155 kgf·cm, 11 ft·lbf)

6. FILL RESERVOIR WITH BRAKE FLUID

7. BLEED MASTER CYLINDER(See page 32–4)
SST 09023–00100

8. BLEED BRAKE LINE(See page 32–4)

9. CHECK FLUID LEVEL IN RESERVOIR

10. CHECK BRAKE FLUID LEAKAGE

11. CHECK OPERATION OF BRAKE ACTUATOR(See page 32–51)

PROPORTIONING VALVE ASSY

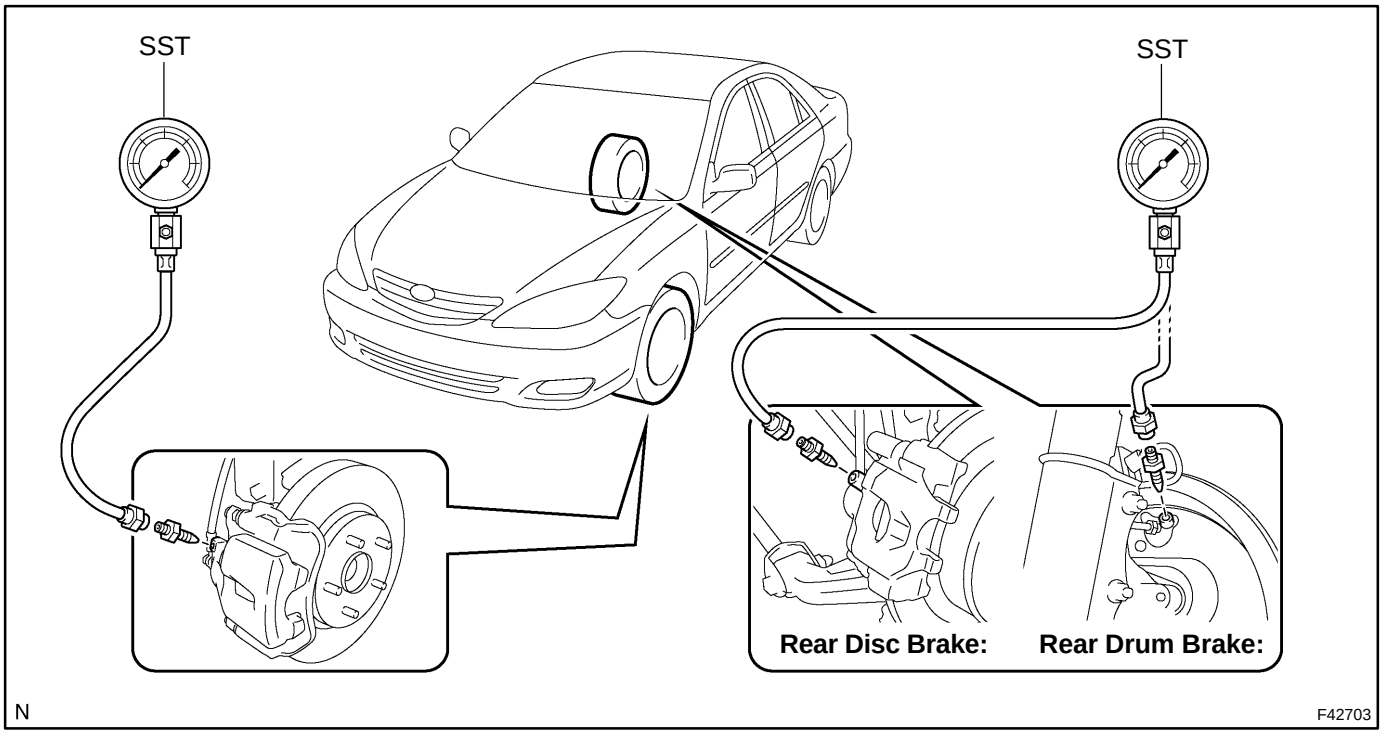
320I5–01

ON–VEHICLE INSPECTION

1. INSTALL LSPV GAUGE (SST) AND BLEED AIR

(a) Remove the bleeder plugs from the front and rear brake cylinder.

(b) Install the LSPV gauge (SST), and bleed the air.
SST 09709–29018



2. RAISE MASTER CYLINDER PRESSURE AND CHECK REAR WHEEL CYLINDER PRESSURE

Master cylinder pressure	Rear wheel cylinder pressure
2,452 kPa (25 kgf/cm^2, 356 psi)	2,452 kPa (25 kgf/cm^2, 356 psi)
4,413 kPa (45 kgf/cm^2, 639 psi)	3,177 kPa (32 kgf/cm^2, 460 psi)
7,845 kPa (80 kgf/cm^2, 1,138 psi)	4,413 kPa (45 kgf/cm^2, 639 psi)

HINT:

When inspecting the fluid pressure, inspect the left front and right rear together, and the right front and left rear together.

If the rear wheel cylinder pressure is improper, replace the proportioning valve assembly.

3. REMOVE LSPV GAUGE (SST)

(a) Remove the LSPV gauge (SST).
SST 09709–29018

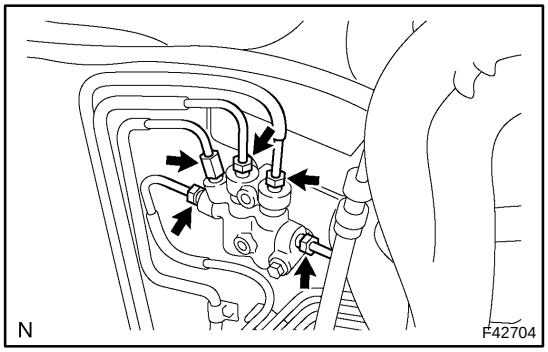
(b) Install the bleeder plugs.
Torque: 8.3 N·m (85 kgf·cm, 74 in.·lbf)

4. BLEED BRAKE SYSTEM (See page 32–4)

5. CHECK FOR LEAKS

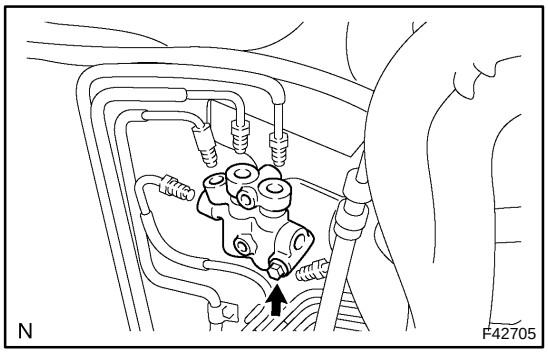
320I6–01

REPLACEMENT

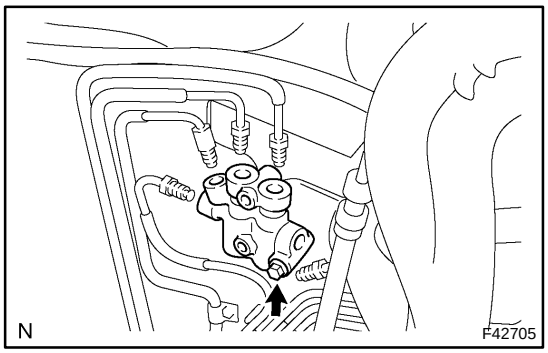


1. REMOVE PROPORTIONING VALVE ASSY

(a) Using SST, disconnect the 5 brake tubes from the proportioning valve assy.
SST 09023–00100

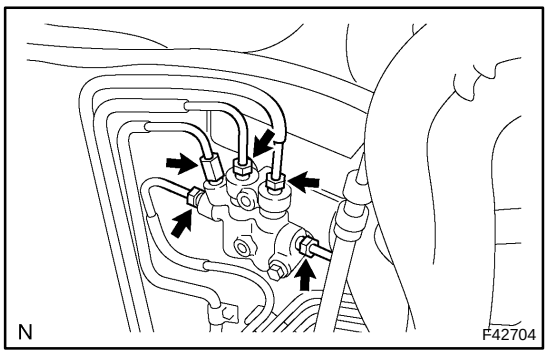


(b) Remove the bolt and proportioning valve assy from the body.



2. INSTALL PROPORTIONING VALVE ASSY

(a) Install the proportioning valve assy with the bolt.
Torque: 5.4 N·m (55 kgf·cm, 48 in·lbf)



(b) Using SST, connect the 5 brake tubes to the proportioning valve assy.
SST 09023–00100
Torque: 15.2 N·m (155 kgf·cm, 11 ft·lbf)

3. FILL RESERVOIR WITH BRAKE FLUID

4. BLEED MASTER CYLINDER (See page 32–4)
SST 09023–00100

5. BLEED BRAKE LINE (See page 32–4)

6. CHECK FLUID LEVEL IN RESERVOIR

SPEED SENSOR FRONT LH

3203N–02

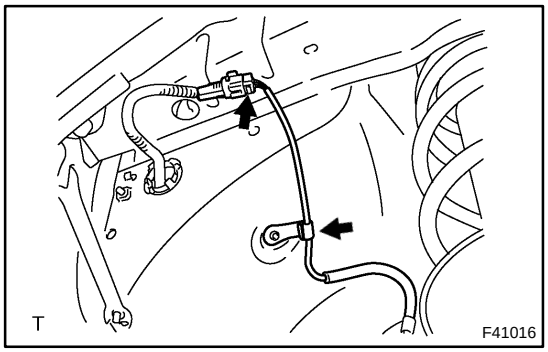
REPLACEMENT

HINT:

Replace the RH side by the same procedures with LH side.

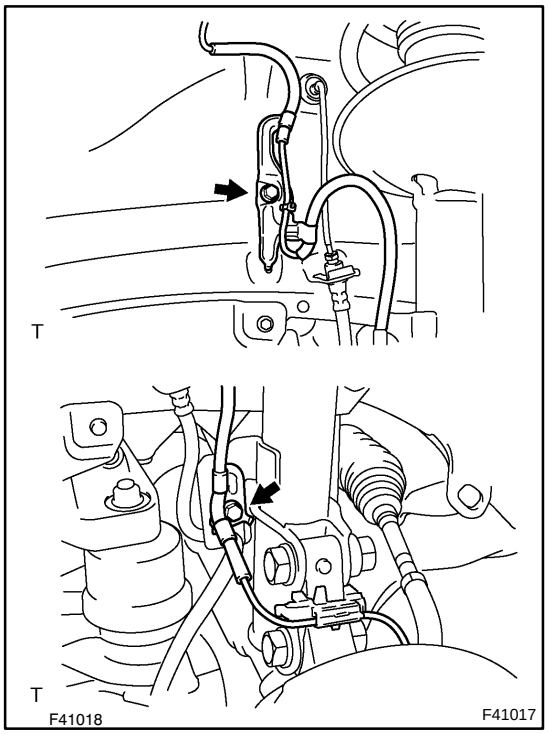
1. REMOVE FRONT WHEEL

2. REMOVE FRONT FENDER LINER LH

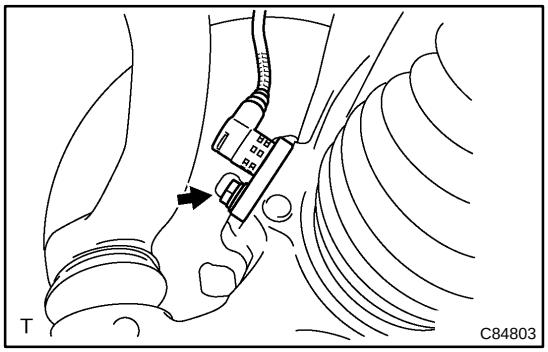


3. REMOVE SPEED SENSOR FRONT LH

(a) Disconnect the speed sensor connector and clamp.



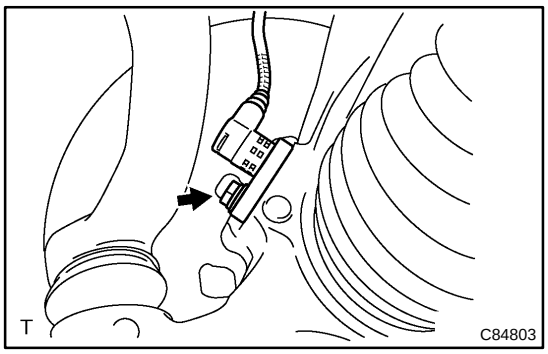
(b) Remove the 2 clamp bolts holding the sensor harness and clamp from the body and shock absorber.



(c) Remove the bolt and speed sensor FR LH.

NOTICE:

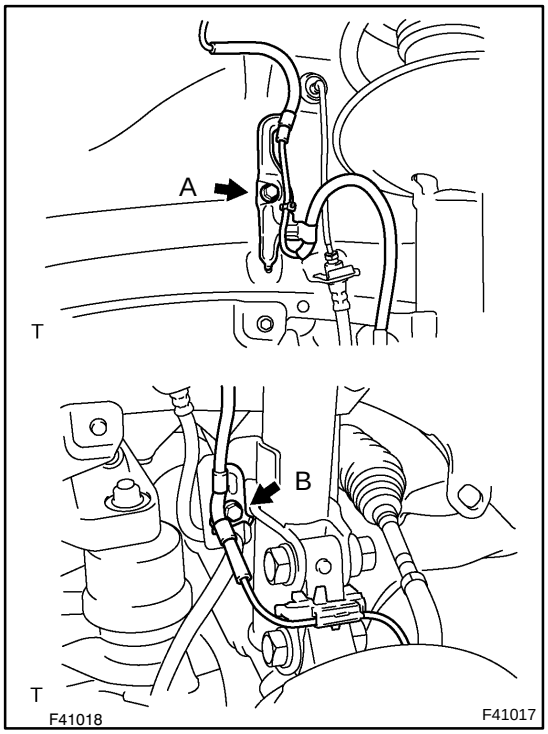
Do not stick and foreign matter on the sensor tip.



4. INSTALL SPEED SENSOR FRONT LH

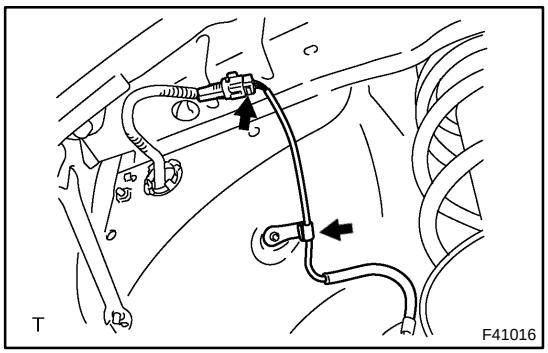
(a) Install the speed sensor FR LH with the bolt.
Torque: 8.0 N·m (82 kgf·cm, 71 in.·lbf)

NOTICE:
Make sure the sensor tip is clean.



(b) Install the sensor harness clamps with the 2 bolts ”A” and ”B” to the body and shock absorber.
Torque:
Bolt A: 5.0 N·m (51 kgf·cm, 44 in.·lbf)
Bolt B: 18.8 N·m (192 kgf·cm, 14 ft·lbf)

(c) Connect the clamp to the knuckle.



(d) Connect the speed sensor connector and clamp.

5. INSTALL FRONT FENDER LINER LH

6. INSTALL FRONT WHEEL
Torque: 103 N·m (1,050 kgf·cm, 76 ft·lbf)

7. CHECK ABS SPEED SENSOR SIGNAL(See page 05–363 or 05–404 or 05–452)

SKID CONTROL SENSOR

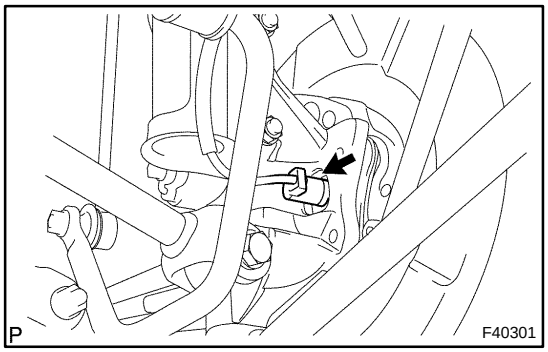
REPLACEMENT

320CS–01

HINT:

Replace the RH side by the same procedure with LH side.

1. REMOVE REAR WHEEL

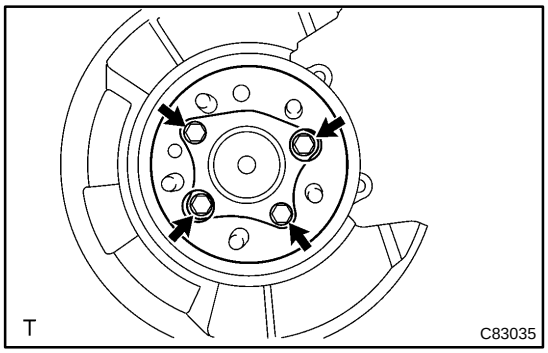


2. DISCONNECT SKID CONTROL SENSOR WIRE

(a) Disconnect the connector from the skid control sensor.

3. REMOVE REAR DISC BRAKE CALIPER ASSY, LH(See page 32–33)

4. REMOVE REAR DISC



5. REMOVE REAR AXLE HUB & BEARING ASSY LH

(a) Remove the 4 bolts and rear axle hub & bearing assy.

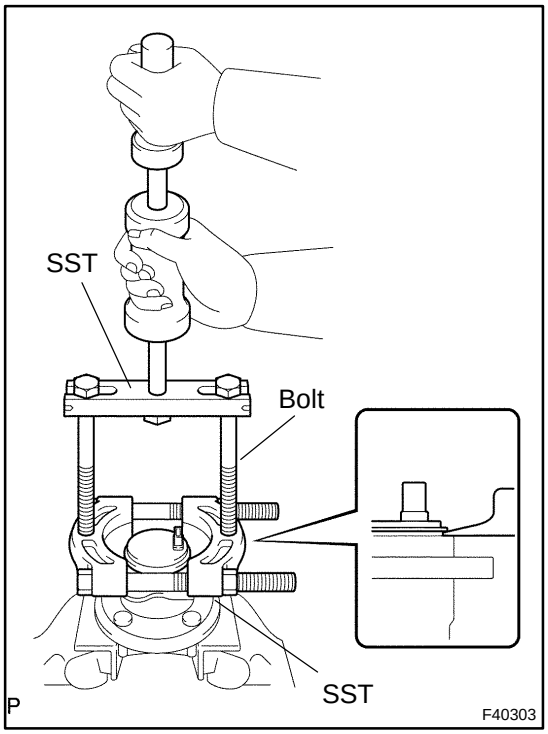
6. REMOVE SKID CONTROL SENSOR

(a) Mount the rear axle hub in a soft jaw vise.

NOTICE:

Replace the axle hub assembly if it is dropped or a strong shock is given to it.

(b) Using a pin punch and hammer, drive out the 2 pins and remove the 2 attachments from SST.



(c) Using SST and 2 bolts (Diameter: 12 mm, pitch: 1.5 mm), remove the skid control sensor from the rear axle hub.

SST 09520–00031 (09520–00040), 09521–00020, 09950–00020

NOTICE:

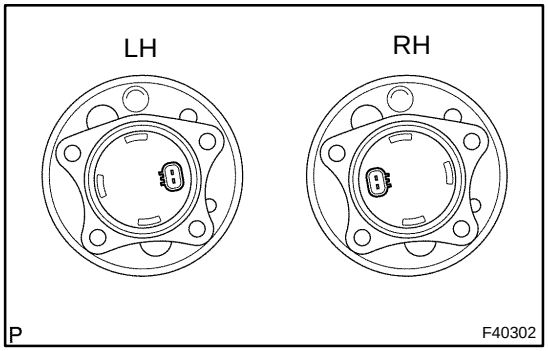
- **If a damage is inflicted to the sensor rotor, replace the axle hub assembly.**
- **Do not scratch the contacting surface of axle hub and speed sensor.**

7. INSTALL SKID CONTROL SENSOR

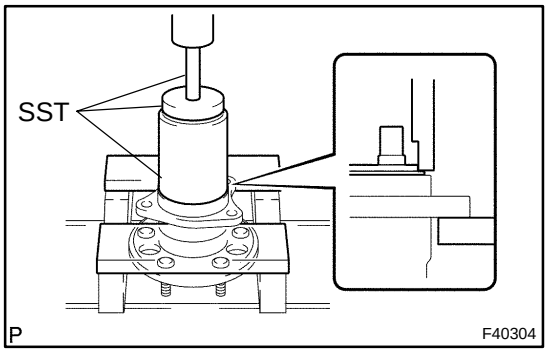
(a) Clean the contacting surface of the axle hub and a new skid control sensor.

NOTICE:

Make sure the sensor rotor is clean.



(b) Place the speed sensor on the axle hub so that the connector is positioned, as shown in the illustration.

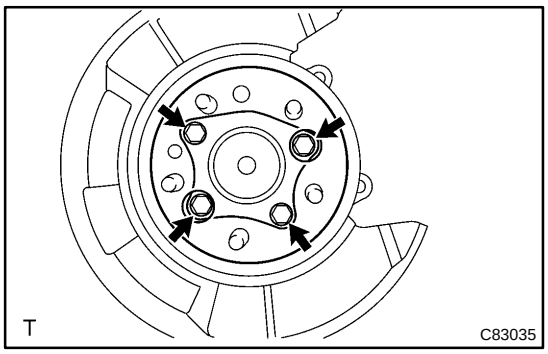


(c) Using SST and a press, install the skid control sensor to the axle hub.

NOTICE:

- **Do not tap the skid control sensor with a hammer directly.**
- **Check that the skid control sensor detection part is clean.**
- **Press in the skid control sensor straight and slowly.**

SST 09830–36010, 09950–60010 (09951–00650), 09950–70010 (09951–07100)



8. INSTALL REAR AXLE HUB & BEARING ASSY LH

(a) Install the rear axle hub & bearing assy with the 4 bolts.
Torque: 80 N·m (816 kgf·cm, 59 ft·lbf)

9. INSTALL REAR DISC

10. INSTALL REAR DISC BRAKE CALIPER ASSY, LH(See page 32–33)
11. CONNECT SKID CONTROL SENSOR WIRE

12. INSTALL REAR WHEEL
Torque: 103 N·m (1,050 kgf·cm, 76 ft·lbf)
13. INSPECT TIRE(See page 27–3)
14. MEASURE VEHICLE HEIGHT(See page 27–3)
15. INSPECT SIDE SLIP(See page 27–3)
16. INSPECT CAMBER(See page 27–3)
17. INSPECT TOE–IN(See page 27–3)
18. ADJUST CAMBER AND TOE–IN(See page 27–3)
19. CHECK ABS SPEED SENSOR SIGNAL(See page 05–363, 05–404 or 05–452)

YAWRATE SENSOR

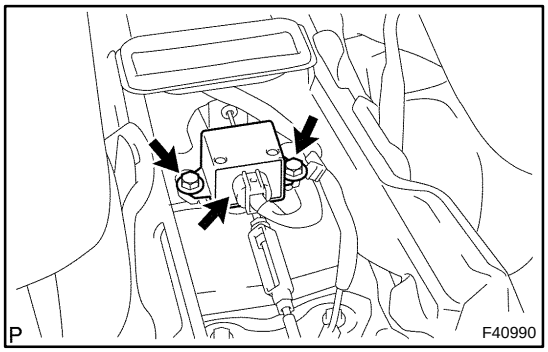
320D6–01

REPLACEMENT

NOTICE:

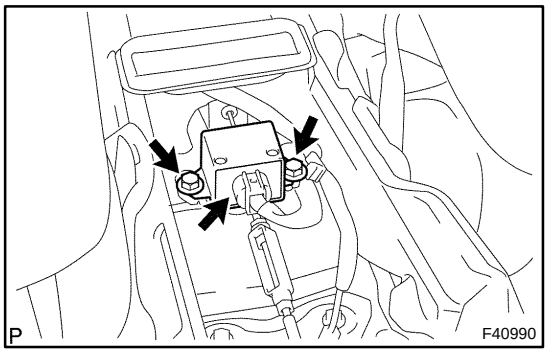
Do not separate the sensor from the bracket.

1. **REMOVE CONSOLE PANEL UPPER REAR (See page 71–12)**
2. **REMOVE RR CONSOLE BOX(See page 71–12)**



3. **REMOVE YAWRATE SENSOR**

(a) Disconnect the yawrate sensor connector.
(b) Remove the 2 bolts and yawrate sensor.



4. **INSTALL YAWRATE SENSOR**

(a) Install the yawrate sensor with the 2 bolts.
Torque: 12.5 N·m (127 kgf·cm, 9 ft·lbf)
(b) Connect the yawrate sensor connector.

5. **INSTALL RR CONSOLE BOX(See page 71–12)**
6. **INSTALL CONSOLE PANEL UPPER REAR (See page 71–12)**
7. **PERFORM YAWRATE SENSOR ZERO POINT CALIBRATION(See page 05–452)**
8. **PERFORM DECELERATION SENSOR ZERO POINT CALIBRATION(See page 05–452)**

STEERING SENSOR

3203S–02

REPLACEMENT

1. **PRECAUTION(See page 60–25)**
2. **SEPARATE BATTERY NEGATIVE TERMINAL(See page 60–25)**
3. **PLACE FRONT WHEELS FACING STRAIGHT AHEAD(See page 60–25)**
4. **REMOVE STEERING WHEEL COVER LOWER NO.2**
   (See page 60–25)
5. **REMOVE STEERING WHEEL COVER LOWER NO.2(4 SPOKE STEERING WHEEL ASSY)**
   (See page 60–25)
6. **REMOVE STEERING WHEEL COVER LOWER NO.3(3 SPOKE STEERING WHEEL ASSY)**
   (See page 60–25)
7. **REMOVE HORN BUTTON ASSY**
   (See page 60–25)
8. **REMOVE STEERING WHEEL ASSY**
   (See page 60–25)
   SST 09950–50013 (09951–05010, 09952–05010, 09953–05020, 09954–05021)
9. **REMOVE INSTRUMENT CLUSTER FINISH PANEL**
   (See page 60–25)
10. **REMOVE STEERING COLUMN COVER**
    (See page 60–25)
11. **REMOVE SPIRAL CABLE SUB–ASSY**
    (See page 60–25)
12. **REMOVE STEERING SENSOR**

13. **INSTALL STEERING SENSOR**

14. **INSPECT SPIRAL CABLE SUB–ASSY**

(a) If the following condition is identified, replace the spiral cable sub–assy with new one.
Condition:
Scratches or cracks on the connector
Cracks, dents or chipping of the spiral cable sub–assy

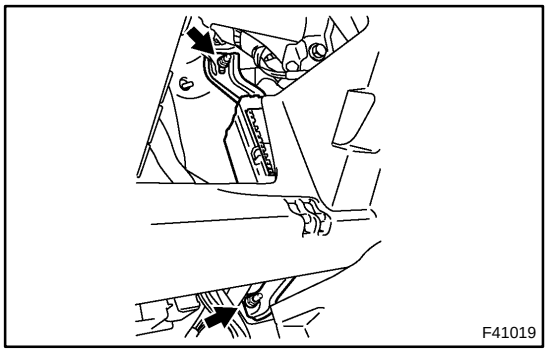
15. **PLACE FRONT WHEELS FACING STRAIGHT AHEAD(See page 60–25)**
16. **INSTALL SPIRAL CABLE SUB–ASSY**
    (See page 60–25)
17. **CENTER SPIRAL CABLE(See page 60–25)**
18. **INSTALL STEERING WHEEL ASSY**
    (See page 60–25)
19. **INSTALL HORN BUTTON ASSY**
    (See page 60–25)
20. **INSPECT HORN BUTTON ASSY**
    (See page 60–25)
21. **INSPECT SRS WARNING LIGHT(See page 05–452)**

SKID CONTROL ECU ASSY

3203T–02

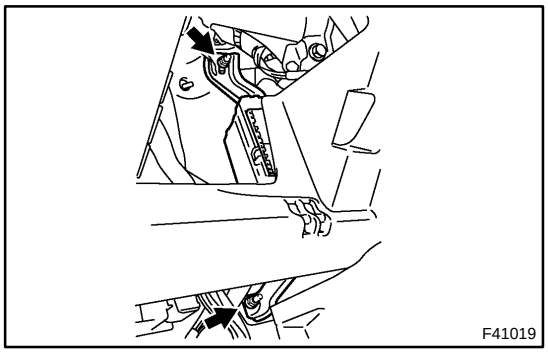
REPLACEMENT

1. **REMOVE INSTRUMENT PANEL UNDER COVER SUB–ASSY NO.1**
   (See page 71–25)
2. **REMOVE INSTRUMENT PANEL SUB–ASSY LOWER**
   (See page 71–25)



3. **REMOVE SKID CONTROL ECU ASSY**

(a) Remove the 2 nuts and disconnect the skid control ECU from the reinforcement.
(b) Disconnect the skid control ECU connectors and remove the skid control ECU assy.



4. **INSTALL SKID CONTROL ECU ASSY**

(a) Connect the skid control ECU connectors.
(b) Install the skid control ECU to the reinforcement with the 2 nuts.
Torque: 5.5 N·m (56 kgf·cm, 49 in.·lbf)

5. **INSTALL INSTRUMENT PANEL SUB–ASSY LOWER**
   (See page 71–25)
6. **INSTALL INSTRUMENT PANEL UNDER COVER SUB–ASSY NO.1**
   (See page 71–25)
7. **PERFORM YAWRATE SENSOR ZERO POINT CALIBRATION(W/ VSC)(See page 05–452)**
8. **PERFORM DECELERATION SENSOR ZERO POINT CALIBRATION(W/ VSC)(See page 05–452)**
9. **CHECK VSC SENSOR SIGNAL(W/ VSC)(See page 05–452)**